THE CLEAN ENVIRONMENT COMMISSION

Manitoba
Environment

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REPORT ON PUBLIC HEARINGS

ABITIBI-PRICE INC.
FML #01
FOREST RESOURCE MANAGEMENT PLAN
1991 - 1998

THE MANITOBA CLEAN ENVIRONMENT COMMISSION
FEBRUARY, 1992

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ABITIBI-PRICE INC
FML #01
FOREST RESOURCE MANAGEMENT PLAN
1991 - 1998

BACKGROUND

The Abitibi-Price pulp and paper mill, located in the town of Pine Falls, derives a significant portion of its wood supply (some 38%) from Forest Management Licence (FML) No. 01. In accordance with regulations of the Manitoba Environment Act, Abitibi-Price Inc. submitted the finalized Eight Year Forest Resource Management Plan, 1991-1998, for renewal of the forest management licence on 30 January 1991.

Site description

The FML is located in the boreal forest on the Precambrian Shield. Elevations rise from Lake Winnipeg on the west, at 217 m, to 335 m at the Ontario boundary on the east (Figure 1, APPENDIX C). Its gross area is 885,705 hectares, within approximate descriptive boundaries of the Winnipeg River to the south, Lake Winnipeg to the west, the Ontario border to the east, and Atikaki Wilderness Park to the north. Three distinct forest sections are represented within the larger boreal classification. The Manitoba Lowlands border Lake Winnipeg and are characterized by little relief and flat, poorly drained land. The Nelson River section has improved drainage, but contains numerous and extensive areas of muskeg. The remainder of the FML is covered by the Northern Coniferous section, where jack pine and black spruce dominate, depending upon available soils and drainage.

Scattered bedrock outcrops are present on the west, but become prevalent toward the east side. Soils are generally Luvisol, Brunisol, Gleysol, or Organic. There are some glacial tills close to the Ontario border, usually with a clay component. Gravel deposits are rare and normally occur on the lakeshore of the former Lake Agassiz at the 275 m elevation. Most of the FML has not been covered by a provincial soil survey.

The net productive area available for logging is 60% of the gross area, or 528,314 hectares. Twenty-four percent of the gross area is designated provincial park, of which one-half is zoned "wilderness" (Atikaki Wilderness Park), and is completely closed to logging. Nopiming Provincial Park has three designated logging zones: closed, restricted, and open.

The prevalence of large forest fires over the past one hundred years has kept most of the soils shallow, with frequent bare rock outcrops. Hence, fire-originated species such as jack pine are common on the FML. The jack pine group occupies 57% of the forest area. Black spruce swamps are frequently by-passed by fires; thus, it is the next largest group at 22% of the area. Hardwoods comprise only 14% of the forested area.

Licence history

The Manitoba Pulp and Paper Co. Ltd. obtained Pulpwood Berth #1, with an area of 718 square miles (185, 962 ha), in 1921 by sealed tender from the Dominion of Canada. When the Spanish River Pulp and Paper Co. Ltd. took over in 1925, the Timber Berth rights were set at 25 years, with provision for an additional 25-year extension. By 1927, newsprint was in production and the townsite completed. In 1928, the Abitibi Power and Paper Company took over, and ultimately became Abitibi-Price Co. Ltd. through merger in 1975.

In 1950, the Timber Berth was renewed by the Manitoba government for another 25 years. When this agreement came up for renewal in 1975, a new arrangement was sought which would ensure a secure wood supply for the company and access to the forest for a variety of users. The Forest Management Licence Agreement was concluded between the Province and Abitibi-Price, and came into effect June 1st, 1979. Through it, the two parties share joint responsibility for the management of the FML. The FML Agreement provides Abitibi-Price with the right to cut timber, construct access roads, and to procure wood from the licence area to meet its wood supply requirements for the mill in Pine Falls. In return for this right, Abitibi-Price is obligated to submit plans, obtain approvals, pay stumpage, implement reforestation, and maintain forestry roads.

Forest renewal for the period between 1930 and 1979 was the responsibility of the Manitoba Department of Natural Resources (DNR). The DNR planted 400,000 seedlings and prepared 10,000 hectares for natural jack pine regeneration over this period. Natural regeneration on most sites was deemed adequate since horse logging was used extensively until the mid-1960's. With the

signing of the Forest Management Licence Agreement, Abitibi-Price became directly responsible for forest renewal. This entails both planning and implementing the required silvicultural work. Normally, two-thirds of the stumpage paid by the company to the Province is directed to a trust fund specifically established to fund forest renewal. The details of forest renewal, allowable expenses, and schedules for replanting are worked out under a memorandum of agreement respecting forest renewal.

A Canada/Manitoba Forest Renewal Agreement provided funds to cover backlog areas between 1984 and 1989.

The Clean Environment Commission

The Clean Environment Commission currently consists of nine members appointed to the Commission by Order-in-Council, and chaired by a full-time civil servant. For the purpose of the Abitibi-Price hearings, an Acting Chair was appointed, and served in this capacity for these proceedings only. The full-time Chair, formerly Deputy Minister of Natural Resources, asked to be replaced for these hearings to prevent any appearance of conflict of interest or possible bias from impinging on the hearings process.

The basic function of the Clean Environment Commission is to receive public input, hear all relevant evidence relating to the proposal and, after due consideration, make recommendations to the Minister of the Environment with regard to the licensing of the proposal registered by the Environment Department for licensing under the Environment Act. Where the Minister does not incorporate the recommendations of the commission in the environmental licence, under section 12(8) of The Environment Act, written explanation of the deviations must be supplied, and made available in the central public registry.

The Abitibi-Price Forest Management Plan hearing

Following the advertisement of Abitibi-Price's Operating and Renewal Plan for its Forest Management Licence, the Department of Natural Resources recommended to the Minister of Environment that public hearings be held in keeping with The Environment Act. On 27 May 1989, the Honourable J. Glen Cummings, Minister of Environment, requested that the Clean Environment

Commission hold public hearings regarding the application for a Five Year Forest Management licence.

A feature of the licensing agreement of 1979 was the requirement for the filing of five year plans by Abitibi-Price. With the severity of the forest fire situation in 1989, it became evident that the five year plan which had been tabled in the public registry on 25 March 1989 was obsolete. Significant timber blocks within the FML area were lost so that both the cutting and renewal strategies were highly disrupted. In February 1990, the Minister of Natural Resources responded favourably to the company request that the plan encompass eight years (1991-1998), which is the balance of the initial 20 year planning period. The eight year plan was submitted in October 1990 to the Director of Forestry.

Following notification of parties which had previously indicated an interest in the matter and the placement of advertisements in appropriate newspapers, hearings were held in St. Georges, Manitoba on October 16-18, and in Winnipeg on October 19 and November 16, all in 1991. Commissioners in attendance at the hearings were Mr. Randal Smith, Acting Chairperson, Ms. Joan Vestby, Dr. Barrie Webster, Mr. Len Flett, and Mr. Maurice Blanchard.

The proposal

The Abitibi-Price Inc. proposal (exhibit 1) suggests both cutting and forest renewal prescriptions for the period 1991-1998. The proposal includes detailed year-by-year, site-by-site woodlands activities to be undertaken on the FML area in providing a continuous supply of suitable wood for the company's newsprint mill at Pine Falls. Book One of the proposal includes descriptions of harvesting methods, proposed road construction, buffer management, and the forest renewal program.

Book Two provides additional detailed forest resource, harvesting, and renewal information. Township maps at a scale of 1:50,000 describe the proposed activity, and list company operations, those of communities, quota holders, and third parties. Contingency areas are also delineated. Volume estimates by species are given comprehensively.

Book Three is an addendum to the proposal which details the mitigation procedures identified by the DNR and which are required for subsequent approval of the Eight Year Plan, and

was submitted 18 January 1991. Revised forest renewal prescriptions and other additions or deletions are also covered.

Guidelines and the environmental impact assessment

The Manitoba Environment Act of 1988 requires that all environmentally significant developments, whether proposed or operating, be subject to an assessment and licensing process. Forest management operations are identified as Class 2 developments under Manitoba Regulation 164/88.

After Abitibi-Price tabled its initial Five Year Plan, the requirement to conduct an environmental impact assessment (EIA) was communicated to the company 7 December 1989. Public scoping sessions were held at that time to develop draft guidelines for the EIA. Guidelines for the preparation of an EIA capable of satisfying the requirements of the Act were prepared by the Department of Environment using input received at these meetings, and through the guidance of an inter-departmental Technical Advisory Committee (TAC). The TAC provided government input to the EIA, advice to the proponent regarding the process, and technical review. The TAC for the Abitibi-Price EIA was composed of representatives from the Manitoba government departments of Environment; Natural Resources; Industry, Trade, and Tourism; Culture, Heritage, and Citizenship; Northern Affairs; Rural Development; Health; Highways; as well as the federal Indian and Northern Affairs Canada; Canada Department of Fisheries and Oceans; and the Canadian Wildlife Service of Environment Canada.

The first draft of EIA guidelines was provided to Abitibi-Price February 1990. The proponent selected Synthen Resources Limited as its lead consultant in March 1990 to prepare the EIA. Revisions to the EIA guidelines were sent to Abitibi-Price in June and November of 1990. The Clean Environment Commission received the guidelines into evidence at St. Georges on 16 October 1991 (exhibit 2). In the guidelines, the stated intent of the EIA was:

1. to demonstrate that the FML Eight Year Forest Management Plan will result in sustainable forest ecosystems.
2. to identify potential sources of impacts both positive and negative and, where applicable, ways to prevent, eliminate, or mitigate any negative impacts.
3. to propose mechanisms to involve the affected public and resource users in the assessment of site-specific activities and in the development of mitigation plans.

The Department of Environment and the TAC received the EIA of Abitibi-Price Inc. FML #01 Forest Resource Management Plan 1991-1998 on 28 February 1991 (exhibit 14). In May, the comments of the TAC were received by Manitoba Environment and forwarded to Abitibi-Price. The Department of Fisheries and Oceans also forwarded conditional federal approval of the Eight Year Plan to Abitibi-Price 24 July 1991, subject to a list of mitigative measures which were also outlined (exhibit 3). Following these detailed commentaries, Abitibi-Price on 23 August 1991 issued a Response to Mitigation and Monitoring Recommendations (exhibit 19), dealing with the recommendations of the consultants raised in the EIA. Upon further consultation, revisions to this document were made 19 September 1991 regarding concerns raised by the TAC, and incorporated subsequently within the same exhibit. The company also presented a detailed response to the mitigation measures proposed by Fisheries and Oceans (exhibit 21).

SUMMATION OF EVIDENCE

Evidence was provided to the Clean Environment Commission in both written and oral form; the exhibits are listed in Appendix A. The presentation of the FML #01 Eight Year Forest Resource Management Plan by Abitibi-Price and the corresponding Environmental Impact Assessment by Synthen Resources will be dealt with first in this summary of evidence. Then the briefs and submissions by other interested individuals and groups will be summarized.

DESCRIPTION OF THE FML #01 MANAGEMENT PLAN

Introduction

Mr. David Chown, Woodlands Manager for Abitibi-Price Inc., introduced the proposed FML #01 Eight Year Forest Resource Management Plan to begin the company presentation in St. Georges. A reproduction of the overall electronic presentation of the proposal was provided to the Commission (exhibit 4).

The company, which started in the 1920's, required a wood supply to produce 200 tons of newsprint per day; the current mill produces 500 tonnes. Mr. Chown suggested that if the early wood supply areas were superimposed on the current FML area, the locations of harvest from that early period and from today would be similar, despite sixty years of cutting. As well, although outside of the licensing process of the FML #01 proposal, approximately 60% of the company's current wood supply comes from outside of the FML: by rail, barge, and truck.

The 1979 Wood Supply Agreement between Abitibi-Price and the Province of Manitoba provided for the joint management of the forest resource of the FML area, and defined the roles and responsibilities of both parties. A key feature of this Agreement is that it is, in effect, an "evergreen" licence, subject to the faithful performance by the company of every agreed condition. As each five year plan is developed and then approved by the Province, the twenty-year framework of the Agreement is forwarded by a period of five years.

An addendum to this Agreement was signed in 1988, creating a Forest Renewal Trust Fund, as a means of streamlining the process of payment for reforestation measures. Two-thirds of the

stumpage collected by the Crown is paid into this fund, accessible only by the company, and solely for specific expenditures on approved forest management and renewal practices.

Mr. Chown also provided an introduction to the environmental impact assessment process, which was concurrent with the development of the Eight Year Plan. Continuing consultation occurred between Abitibi-Price, Synthen Resources, the Integrated Resource Management Team of the Department of Natural Resources, and the Technical Advisory Committee overseeing the assessment. The company participants also expended considerable energy and resources in attempting to go out into the marketplace to reach those who might have a legitimate interest in their operations. Contacts were made with the Manitoba Wildlife Federation, the Endangered Spaces program, the Manitoba Naturalists Society, the Manitoba Recreational Canoeing Association, among many others, and a mailing list of interested parties created and kept updated with available information. Approximately 175 persons or groups were included on the mailing list. Effort was expended to bring public participation into the process, and into the shaping of the Eight Year Plan. Mr. Chown suggested that this had been an opportunity of bringing people into an educational forum, so that a broader group of Manitobans would have a clearer understanding of forest management.

Mr. Harold Peacock, Divisional Forester for Abitibi-Price, continued the introductory section of the company presentation. He stated that the three books of the Forest Management Plan represented a strong commitment to sound, multiple-use forest management: a process begun in 1979 and continuing today in a climate where the public has increased expectations of the managers of public forests. The company forest management objectives were spelled out as: 1) sustained yield management, 2) maximum utilization of all species, 3) provision of access for management functions, and 4) community stability.

Prior to the licence in 1979, 400,000 trees had been planted on the FML area. Over the period 1980-1990, Abitibi-Price has planted over 17 million trees, for an average replacement ratio over this period of 1.8:1 (planted:harvested). Mr. Peacock suggested that the possession of the FML by Abitibi-Price has made a dramatic difference in the manner in which the forest has been managed. Tree planting effort over this period has been distributed thus: 39% within current cutovers, 31% in burned areas, and 30% within old cutovers which have not sufficiently regenerated.

Mr. Peacock also recounted the fire history of the area, pointing out the appearance of severe fires since 1929 with 30-year frequency in Manitoba. In terms of the area of inventory depletion on the FML between 1979 and 1989, harvesting accounted for 14%, and burns 86%. Looked at another way, in terms of volume depletion, harvesting accounted for 28%, wildfire 71%, with an additional 1% which might be available through salvage.

The newsprint mill

This section of the Forest Management Plan deals with the main user of the forest resource in the FML area, the Abitibi-Price newsprint mill at Pine Falls. The anticipated production for the eight year period ranges between 487 and 510 tonnes per day. With the process available at this mill, the Plan projects estimated wood requirements for the same period to range between 461,000 m^3 and 482,000 m^3 of virgin fibre annually. Recycled newsprint is expected to provide between 4 and 5% of fibre requirements, with Kraft pulp usage in the process projected at 5%.

Wood procurement for the eight year period from the FML is projected to be approximately 38% of the requirement. Of the balance of the wood supply, 21% is supplied by rail from the western area, 27% brought from the Integrated Wood Supply Area (mostly by barge), and 13% trucked from southeastern Manitoba. From the 38% supplied on the FML, about 56% is projected to be cut in company operations, 19% by communities, 12% by third parties, and another 11% by quota holders.

In response to a question regarding the technical possibilities of utilizing more jack pine in the mill, Mr. Chown said that without redesign, a significant increase would not be possible, and that as a newsprint mill, it already used the highest percentage for its type in Canada. Mr. Peacock said that the first updates to the mill in the future would be to meet required environmental standards; other conversions would follow. Mr. Chown also responded that, in the preference of the company, the FML would be the last wood source from which supply to the mill would be reduced, due to is proximity to the mill.

Responding to a question regarding the possibility of a de-inking facility at the mill, Mr. Peacock said that the current uncertainty regarding future ownership of the mill made it difficult to assess this factor. Eventually, it might be possible to replace 20% of the wood supply with de-inked, recycled fibre.

Mr. Peacock continued the next section of the company presentation, which covered the main body of the Eight Year Plan. The level of detail which was presented was enhanced by the geographic information system (GIS) forest inventory data base developed by the Forest Management Section of the Forestry Branch of the Department of Natural Resources, and by the efforts of the company itself in pioneering the use of this technology. In 1986, complete aerial photography coverage of the FML updated the forest inventory, and further aerial inventory took place after the 1989 forest fires. The total inventory was placed within GIS and provided to the company by the Province in 1990.

AREA CLASSIFICATION

Several classifications were used to describe the forest area. In terms of gross area classification, 76% of the FML is open Crown land; 24% of the area is in provincial parks. Of the portion found within Atikaki Wilderness and Nopiming Provincial Parks, 48% is closed to forest resource extraction, 32% allows logging under restricted conditions, and 20% is open to logging. Atikaki Wilderness Park is completely closed to logging. To further describe the FML resources by gross area, 45% of the area is forested in preferred softwood species, 28% is non-productive in commercial forestry terms, 14% currently shows potential for productivity, 8% is hardwood forest, and 5% is water. Of the softwood "working group," jack pine is the most prevalent species, at 64%, due to the action of fire in its regeneration. Black spruce is the next largest species at 28% of productive forest area, tamarack at 5%, balsam fir 2%, and white spruce 1%.

CUTTING CLASSES

To further describe the forest, and later to determine annual allowable cut, Manitoba utilizes a unique system of cutting classes, developed to address significant variation in growth within a distribution of age classes. The objective of the cutting class system is to manage the forest resource for a "normal" distribution, which for softwoods in this area would be approximately 17% in classes 0 (not renewed), I (regenerated), II (saplings), and IV (mature); 33% in class III (immature), and a marginal percentage in class V (overmature). Current distribution of softwoods on the FML is 20% class 0, 6% class I, 13% class II, 41% class III, 19% class IV, and 1% class V.

ANNUAL ALLOWABLE CUT

The net merchantable volume of timber for the FML was calculated using 25 m^3 of timber volume per hectare as a criterion of economic viability for softwood stands. By these estimates the merchantable volume is: jack pine 8 million m^3, black spruce 6.5 million m^3, white spruce 1.2 million m^3, tamarack 1.5 million m^3, and balsam fir 0.5 million m^3. Mr. Peacock said that this volume would represent about 100 million trees in cutting classes III, IV, and V.

From this volume and from the distribution, annual allowable cut (AAC) is calculated. The AAC is the volume that can theoretically be harvested in perpetuity. In this case, cutting classes 3, 4, and 5 form 60% of the softwood area. Assuming an average rotation period of 95 years, the volume would have to last for 57 years. By dividing total available volume by 57 years, gross volume per year is determined. A 12% safety factor is then deducted for fire, disease, and insect losses. The AAC for softwoods is 276,760 m^3 per year.

The AAC is distributed by species, and the actual cut does not always reflect the full allowance. The Eight Year Plan provides for an overall utilization rate of 60%. Projected utilization rates for the Plan are: spruce 96%, pine 58%, poplar 19%, tamarack 20%, and ash 69%. Markets for surplus species and volumes have not yet been developed from this location.

HARVESTING

Mr. Peacock stated that the clear cutting system is appropriate for most softwood species on the FML. He went on to say that due to the patchy spatial distribution of stands on the licence, most clear cuts are small. New forestry guidelines relating to wildlife would limit a clear cut square block to 16 hectares maximum. However, because of the complex nature of the terrain and forest communities, a variety of harvesting strategies are employed to meet both environmental and economic considerations. Other harvesting approaches mentioned were fringe, partial, selective, and modified cuts. Logging methods were also described, including cut and skid tree length to roadside, mechanical felling and bunching, and full tree cut and skid to roadside.

In response to a question regarding the choice of harvesting approach, Mr. Chown stated that the harvesting method, whether clear cut or alternate strip, was selected according to the site conditions and geared, as well, to the renewal method.

Salvage operations have been significant to the harvest over the last ten years due to fire and to blowdowns. The salvage operation needs to be prompt, and may result in alterations to the

planned cutting schedule. Mr. Peacock recalled that approximately 40% of the last year's harvest was of a salvage nature.

Normal harvesting strategy would involve starting at the beginning of a road system and cutting towards its end as the road advances. The reverse sequence will be applied in specific cases to assist in the maintenance of game populations, where the road can be retired and replanted as the operation works its way out.

NOPIMING PARK

The Interim Management Guidelines for Nopiming Provincial Park (exhibit 7) provide some general guidelines for commercial forestry within the park. In response to concerns identified by the Integrated Resource Management Team, logging methods have been proposed by the company to favour natural regeneration, selective cutting where feasible, winter harvesting along sensitive areas, extended buffers along canoe routes, road retirement, and phased cutting to lessen visual impact. These methods have been presented as responsible procedure while operating within the park.

ENVIRONMENTAL CONSIDERATIONS

The Plan states that Abitibi-Price wishes to conduct its operations in an environmentally appropriate manner. Mr. Peacock discussed a number of ways in which the company operations were shaped by environmental considerations: 1) the seasonal scheduling of particular operations as determined by the site, 2) the selection of appropriate logging methods, 3) the use of wide tires or pads on equipment, 4) the flagging of sensitive areas, 5) bi-weekly inspections with DNR staff, and 6) the integration of pulp, sawlog, and firewood operations where possible. In 1990, an Environmental Protection Committee was formed within the company.

RESEARCH

Mr. Peacock stated that Abitibi-Price is currently involved in research investigating moisture content in wood to optimize the current mill process. A "double flail" delimber is being developed to delimb trees at the stump, saving nutrients on site and eliminating brush piles at roadside. New equipment such as the Norcar harvester and forwarder (exhibit 16) are being considered for future operations, where economic.

ROADS

The Plan proposes to add 100 km of all weather roads to the 240 km already constructed by the company, and to build approximately 400 km of chance and winter roads. Chance, or temporary haul, roads are usually retired and reforested, according to Mr. Peacock, and winter roads are seasonal. Road locations are chosen to obtain the least negative impact while maintaining construction feasibility. Stream and river crossings of significance are selected on site with the Integrated Resource Management Team. Decisions are made as to crossing location, structure type, and mitigation to be employed. Mr. Peacock said that road rights-of-way are cleared in winter wherever possible. Construction is shut down in wet periods. Adequate culverts are installed to maintain the natural drainage pattern.

When asked a question as to whether chance roads were retired in all cases, Mr. Peacock replied that this was a new program. Such a program had been reviewed in Saskatchewan the previous year. The method would help to solve other wildlife, fishery, and recreation problems created by increased access, and would put the areas back into forest production to maximize the growth potential of the area.

Mr. Peacock also highlighted some of the conflicting needs and interests regarding roads and subsequent access within a multiple-use forest management area. The need for the use of roads for fire protection may conflict with game management objectives promoting road retirement. The exercise of aboriginal rights may be enhanced by access provided on logging roads. This is frustrated by the gating of roads in single-use policy. The company proposes the formation of an *ad hoc* advisory committee which would report to the DNR Integrated Resource Management Team and suggest appropriate and specific road strategies.

Responding to a question as to whether the company feels that its roads should be open to the public, Mr. Chown said that the Agreement states that its roads should be open to the public. Abitibi does not consider it their responsibility to limit access to mitigate hunting or fishing pressures on wildlife. Their only preference for restricted access would come as a result of conditions of high fire risk, or for localized closure for employee safety.

The main components of the proposed all-weather road program of the Eight Year Plan are: 24 km. extension of the Rice River road, 50 km extension of the Happy Lake road, 6 km access roads to Black River, 8 km in the Bissett area, a 4 km spur from the Rice River road, and 6 km near Highway 304 opposite Wanipigow Lake.

In response to a question regarding alternate transportation methods, Mr. Chown said that the most promising alternative to date was the next generation of harvesting equipment. Long-forwarding units in association with newer harvesters could reduce the need for chance roads by 50%.

BUFFERS

Buffers along roads, waterbodies, and cottage areas reduce the chance of erosion and sedimentation of waterways, offer protection to wildlife, and restrict sight into fresh cutovers. The normal buffer size ranges from a 10 m equipment restriction for intermittent creeks to a 100 m zone around lakes, rivers, and highways. Site-specific recommendations are made in conjunction with the Integrated Resource Management Team.

Mr. Peacock suggested that it was in the area of maintenance where buffers presented the challenge during this planning period. He suggested that due to wind and insect damage, many buffers were unhealthy, and posed a severe fire hazard. Trials along Highway 314 have begun for selective cutting within buffers. Planting of spruce and pine, and the promotion of natural aspen suckering for fire suppression near roadways have also been suggested.

LOSS CONTROL

Fire prevention and suppression, as well as insect and disease control were identified as a provincial responsibility on the FML. Mr. Peacock said that Abitibi-Price is a major player in a supportive role, providing and developing specialized equipment and fire patrols.

The current spruce budworm infestation began in 1975, and has gone on for a longer period than normal. Mr. Peacock described the spraying for budworm by the Province on the FML as too little, too late.

PARKS AND HERITAGE SITES

New provincial park guidelines were developed in 1990. The trans-FML road is now acknowledged as the third major park entrance, and signs will be posted accordingly. Mr. Peacock took the position that careful logging in parks, following established guidelines, will not detract from park objectives.

In terms of the protection of heritage sites, a provincial Heritage employee now is a member of the Integrated Resource Management Team, informing the company regarding sensitive sites.

WILDLIFE MANAGEMENT

The company continues to involve itself in support of wildlife research, as it has done with woodland caribou and the great gray owl. A major caribou study, which the company has supported to the extent of five to ten thousand dollars annually over a number of years, will be completed this winter. This report will provide information on caribou movement, habitat, and the impacts of forestry operations on their annual cycle. With the Province and other participants, Abitibi-Price is a partner in the Integrated Wildlife and Forest Management Project, which it is expected to fund at $35,000 annually.

Wildlife guidelines for forestry are quite specific about moose habitat management, and it is a major concern on the FML. Selective and modified cuts can be used to optimize moose habitat within stands of mixed age classes. As an example of the company interest in wildlife management, Mr. Peacock cited the case of a heron rookery around which the company established a 200 m buffer.

The aquatic environment is also a concern in the company plans. Herbicide buffers (50 m ground, 100 m aerial application), equipment restrictions, limits on the seasonal timing of operations, road construction guidelines, and stream crossing guidelines are all specified for the protection of waterways.

MULTIPLE USE

Mr. Peacock said that the woodlands operation is staffed by recreationists and environmentalists, who understand the concept of multiple use. However, for reasons of safety, this may not always mean multiple uses will be ongoing at the same time. Sequential use may be practised in some cases, to protect workers and the public. Other commercial users -- wild rice harvesters, outfitters, miners or prospectors, and trappers -- may benefit from improved access provided by company operations. There are also some 600 cottages present on the FML, and widespread canoeing in and around the area. It was stated that the company recognizes the traditional rights of treaty Indians of gathering, foraging, hunting, fishing, and trapping.

INTRODUCTION TO FOREST RENEWAL

Mr. Vince Keenan, Forest Renewal Supervisor with the Pine Falls Division of Abitibi-Price, presented the Commission with evidence concerning forest renewal for the Eight Year Plan. Under the 1979 wood supply agreement, responsibility for reforestation within the FML rests with Abitibi-Price. Two objectives of the 20 year plan which have been followed in the current plan are: 1)

sustained yield management, and 2) increase of spruce annual allowable cut while maintaining genetic diversity on the FML. Two-thirds of stumpage fees, which are based on the price of newsprint, are set aside in the Forest Renewal Trust Fund (\$4.66/ m^3 to 1993, \$6.29/m^3 thereafter) for use in authorized forest renewal.

REGENERATION

Mr. Keenan stated that for white spruce areas, for example, the objective is to manage for softwoods, with the minimum renewal being 75% softwood restocking. Of the overall 24,000 hectares proposed to be cut in the Plan, approximately 16,000 ha will be left to regenerate naturally, and 7,900 ha will be treated by a variety of silvicultural methods.

Aerial (8,000 ha) and ground (45,000 ha) surveys are proposed over the period of the Plan to inform forest renewal planning and operations. Ground surveys will be utilized to review past projects, to survey current regeneration, and for general ground-truthing.

Provincial standards for restocking vary with the cover type which predominates prior to cutting, and is divided into four cover types. In general, total restocking should exceed 75% in all types, with the mix of hardwood/softwood dependent upon cover type. Mr. Keenan presented graphed data from two years of regeneration surveys. Of the 5,000 hectares surveyed, 32% of the area was softwood (S) and 34% mixed softwood/hardwood (M) which showed restocking to the provincial standard. Approximately 32% of the total area was not sufficiently regenerated when compared to provincial standards.

Mr. Keenan provided a further breakdown of the area deemed to be insufficiently regenerated: 90% has been stocked in the 51-74% stocking range, with 70% in the 61 -74% range. The opinion was offered that restocking of these areas would likely improve over time. The point was also made that extensive site preparation would be required to improve these stocking levels, which would reduce the stocking level to near zero. Mr. Keenan suggested that if areas of marginal restocking were left as they were, for economic and practical reasons, good wildlife habitat was being established with the presence of browse species, and that ecological diversity was being maintained. Cost for marginally restocked areas was pointed out to be a factor since repeat silvicultural treatment could cost \$600/ha.

SILVICULTURAL PRESCRIPTIONS

Silvicultural prescriptions are diverse: including natural regeneration, aerial seeding of jack pine, or a variety of treatments combined with replanting. Site preparation treatments are: 1) alternate strip shear blading in mixed woods, treating 65% of a site, providing both space and shade for planted softwoods; 2) shear blading, to reduce fire hazard in some spruce budworm areas; 3) disc trenching (the primary method of site preparation), to mix the organic and mineral soil and provide reduced competition for seedlings; 4) drag chains, used only when fire hazard is low, to break up cone-bearing slash; and 5) chemical ground treatment, used primarily in alternate strip and shear bladed areas to reduce competition due to aspen suckering.

Responding to later questioning regarding replacement of disc trenching equipment with patch scarifiers, Mr. Chown stated that the older equipment should not be phased out before its date of economic retirement, which would be in another four or five years.

Abitibi-Price proposes to plant close to 14 million trees over the eight year period, primarily black (10 million) and white (3 million) spruce. Black spruce is the preferred species for the mill process, and is also more insect resistant in areas of budworm infestation. A Tree Improvement Program was instigated with DNR in 1987, to provide superior black spruce seed for germination.

Mr. Keenan, responding to a question regarding delays in replanting, stated that it is generally more cost-effective to treat the area as soon as possible, to limit the effects of competition on the site. He stated that they occasionally run into some backlog with smaller contractors completing their areas, and with backlog in burnt areas. In responding to a question regarding replanting off the FML, Mr. Peacock said that the Province had the responsibility to do so, and that he did not feel that DNR consistently received the money to adequately carry out the task. Mr. Chown pointed out that the stumpage received in these areas was one-third that paid by Abitibi, and that it did not go into a trust fund dedicated to renewal activity, but into general revenue.

A program of juvenile thinning of 970 ha over the duration of the Plan is to be directed primarily toward stands which have regenerated naturally into an "overstocked" condition. The spacing of these juvenile trees will allow, in more optimal conditions, release of their growth potential.

AERIAL CHEMICAL USE

Mr. Keenan stated that all application of chemicals is done under licence with Manitoba Environment. The forestry herbicide "Vision", with the active ingredient glyphosate, is used in aerial application at rates of 4-6 litres/ha. The herbicide biodegrades rapidly into naturally-occurring compounds, and would require a larger dose than table salt to be toxic to humans. The Department of Environment conducted both controlled forest and aquatic experiments with glyphosate between 1985 and 1987. These studies confirmed that absorption is the only mode of action, verified the tolerance levels of some native plant species, and verified rapid biodegradation in soil.

COST OF FOREST RENEWAL PROGRAM

The proposed forest renewal program will cost $8.2 million over eight years: 1) surveys $0.76 million, 2) site preparation $2.48 million, 3) planting $3.03 million, 4) thinning $0.52 million, 5) aerial spraying $0.25 million, and 6) administration $1.08 million.

Book Two, FML #01 Eight Year Plan

Mr. Keenan dealt very briefly with Book Two of the Management Plan, which contains the projected operations data for the period. The Book is particularly detailed, composed largely of tables and computer-generated maps. Section 1 describes harvesting operations, operators, equipment to be utilized, road and bridge construction, and sequence of operations. Section 2 is formed of township maps of harvesting and main road activities. Section 3 lists volume in m^3 for each operating block. Section 4 lists silvicultural prescriptions by block and township.

Book Three, Addendum, FML #01 Eight Year Plan

HAPPY LAKE ROAD

Mr. Dave Chown proceeded with an overview of the "Happy Lake Chronology", which appears in the presentation version of the Forest Management Operating Plan (exhibit 4). His stated intentions were to demonstrate, through example, the detail and timing of the planning required, the extent of the approvals process, and the necessity of involving government at the policy level in forest management. The primary issue involved was that of the conflict of road access and hunting control in primary woodland caribou habitat in the Happy Lake region.

Stops and starts were made on construction of the road while consultation with Directors in DNR went on regarding access questions. Eventually, significant modifications were made to the operating plan, and to regulations under both the Lands and Wildlife Acts.

Mr. Vince Keenan went on to detail the changes which resulted from the ongoing dialogue between the company and DNR. Possession of woodland caribou in Game Hunting Area 26 and the possession of a loaded firearm within 300 m of resource road were both made illegal. In addition, the Minister may control, prohibit, or govern the operation of motor vehicles on resource roads.

Furthermore, through consultation with the Integrated Resource Management Team, the company has agreed to reverse its harvesting schedule in the Happy Lake area. Harvesting will commence at the far end of the road, with the road being closed progressively as harvesting continues.

OPERATIONAL CHANGES

Several other changes were made in operating plans in response to concerns expressed by the Integrated Resource Management Team. Changes in operating areas were made to accommodate concerns regarding the Owl Lake caribou herd. Changes were also made in bridge locations, and in proposed bridge construction techniques.

Overview

Mr. Dave Chown delivered an overview of the Eight Year Forest Resource Management plan on behalf of Abitibi-Price Inc. He said that the area of the FML is rather unique, and poses difficulties in the forestry operation. Cutting areas are small and not contiguous, aggregate for roadbuilding is scarce, and weather conditions are extreme and variable.

Mr. Chown also stressed the fact that there were a variety of operators on the licence, including the company, and that the surrounding communities were also involved.

Mr. Chown also compared the relative costs of newsprint production: $465/tonne in eastern Canada, $385/tonne in the southern United States, and $300/tonne for a new recycling mill in the northeastern United States. He did not mention Abitibi-Price's Pine Falls cost of production, but

stated that competition was a factor in all company decision-making. Forest renewal costs are approximately $18/tonne on the FML, which is a direct cost not borne in some neighbouring provinces. Nonetheless, Mr. Chown suggested that the state of forestry has been advanced by the consultative and assessment process, and that the Pine Falls division of Abitibi-Price is now a leader in forest management.

THE ENVIRONMENTAL IMPACT ASSESSMENT

The environmental impact assessment (EIA) of Abitibi-Price Inc. FML #01 Forest Resource Management Plan 1991-1998 was prepared by Synthen Resources Limited of Winnipeg. The core study team consisted of Dr. Peter Ashton (Synthen Resources), Harold Westdal (H.N. Westdal & Associates), and Ruth Marr (Marr Consulting and Communications). Additional expertise was utilized from within government institutions, universities, and other private consulting firms. Guidelines for the EIA were circulated to representatives of the public and special interest groups, and moved through several iterations over the duration of the process.

Dr. Peter Ashton, President of Synthen Resources Limited, described the process by which the environmental impact statement was completed and presented to the Technical Advisory Committee and to the Minister of Environment in February 1991. The first phase of the EIA study, March to May 1990, was a scoping process conducted by the principal researchers to broadly identify the areas where probable impacts could be identified, or where inadequate knowledge existed to predict impacts with an adequate degree of certainty. An interim study document resulted from this scoping exercise, and was submitted to the TAC for general comment on the direction proposed for the EIA. Phase two of the assessment process, of some nine months duration, involved the detailed technical aspects of impact assessment. Available public scientific literature, site-specific studies, surveys, and consultation with experts were involved in a synthesis of data which forms the impact statement.

The Synthen environmental impact assessment on behalf of Abitibi-Price (exhibit 14), and Synthen's presentation of this report to the Clean Environment Commission (exhibit 12), follow a format established in the EIA guidelines, where impacts are investigated according to differing aspects of the overall environment within the FML. Each chapter of the EIA report reviewed the TAC guidelines, the current baseline conditions, the probable impacts to the particular topic, and the proposed recommendations for mitigation and monitoring.

Physical environment

Dr. Ashton detailed the areas which the TAC guidelines list under the heading of physical environment: topography, landforms, geology, soils, and climate. He also mentioned that Synthen had included aspects of hydrology and groundwater within this subject area.

The terrain of the FML is generally flat to hummocky, with higher elevations found on the east side. The physical environment has been shaped in major fashion by the influence of glaciation and inundation of glacial Lake Agassiz. The eastern part of the FML contains a multitude of glacially-created lakes, with general drainage to the east or south. The western part contains peatlands and bogs interspersed with rocky ridges. Detailed soil surveys within the FML have not been carried out. A deep fractured bedrock aquifer underlies the entire FML, likely interconnected with surface bodies of water. In conducting the study, Synthen found that baseline water quality information for FML waterbodies generally does not exist.

PREDICTED IMPACTS

Proposed forestry operations may have impacts on the physical environment as a result of road construction, forestry equipment, log skidding, fuel handling, waste disposal, and through the possible enhancement of greenhouse gas emissions into the atmosphere.

Dr. Ashton stated that soils have been described as the least renewable of the renewable components of the forest ecosystem, and critical to its functioning. Decreased porosity or water retention of soils due to compaction, erosion through exposure and runoff, and soil drying are potential impacts of forestry operations. It was suggested by the consultants that harvesting and site preparation as proposed within the Eight Year Plan would not be major areas of impact, given the type of landform, the site conditions, and the scale of operations present on the FML. In the opinion of the study team, road construction constitutes the most severe form of disturbance, and probable source of negative impacts. In response to a later question, Dr. Ashton stated that it was his professional judgement to say that the process of road construction is one which is very well understood, and one which can be clearly mitigated.

Dr. Ashton emphasized several times the inherent mitigating factor of the generally low relief of the FML topography: good soil stability results from low slopes and low rainfall. The operational influences of wide tires or tracks and the preponderance of winter operations were also stressed. Well-drained upland jack pine sites were identified as the areas most susceptible to soil degradation. Road construction has the potential to affect local drainage patterns, with wetter lowland sites being most at risk.

Microclimates are affected by deforestation, influencing the local water table, and the soil temperature and moisture content. Dr. Ashton stated that from a regional or global climatic

perspective, the study team deemed the proposed operations to be completely insignificant with respect to the provision of a carbon sink or to global warming.

RECOMMENDATIONS FOR MITIGATION

The Synthen assessment of the proposed forestry operations did not identify any serious physical consequences which were considered unmitigable. The principal mitigation measures proposed in the impact statement were:

- Borrow pits and chance roads should be rehabilitated as quickly as possible to encourage vegetative cover.
- Roadway shoulders and gravel pit faces should have a minimum slope of 3:1 to minimize erosion.
- The use of heavy equipment should be discontinued in wet areas or wet conditions.
- Disturbance should be minimized, with a reduction in the number of roads. Improved harvesting and forwarding equipment would reduce the requirement for chance roads.
- Patch scarification was recommended over disc trenching or shear blading, which would constitute new practice on the FML.
- Information and training programs on safe environmental practices, particularly for third party operators, were identified as needs within the operating program. Emphasis was placed on the importance that all specifications regarding buffers and guidelines be adhered to, particularly near waterbodies.

Responding to a later question concerning third-party operators, Mr. Chown stated that their contracts with these operators were being revised to contain an environmental clause. An annual meeting with all contractors is also held where Abitibi's environmental concerns are spelled out.

RECOMMENDATIONS FOR MONITORING

A significant data gap was noted to exist with respect to water quality information for FML lakes and streams. Monitoring on a representative rather than comprehensive basis was proposed, for the purpose of understanding impacts of forestry on water quality parameters. Location of monitoring sites should relate to harvesting areas and the availability of upstream control locations.

The forest resource environment

The EIA guidelines outlined the topics for review under the area of the forest resource environment -- existing environment, harvesting, and renewal operations -- and suggested that these

be investigated within the overall framework of sustainability. Dr. Ashton stated that much of the descriptive material had been covered in the company presentation of the Eight Year Plan and would not be repeated.

Dr. Ashton identified fire, wind, insects, and disease as major factors influencing the FML forest resource. The majority of the FML area has been burned at one time in the period since 1929.

Dr. Ashton chose to stress that the operations carried out by Abitibi-Price are by no means undertaken in an administrative vacuum, and that the process is highly regulated. Abitibi-Price is required to submit a twenty year management plan, an operating plan for each five year period, and an annual plan to provide more detailed information. Subsequent harvesting and renewal activities are carried out under a series of permits (general, work, quarry, and parks) and inspections.

PREDICTED IMPACTS

Predicted impacts were addressed within the EIA first from the perspective of the sustainability of commercial forestry operations, and then from that of the sustainability of forest ecosystems.

From the commercial forestry perspective, what was considered was the long-term viability of the mill wood supply, the community, and the region: whether these forestry practices would result in a managed forest that would support operations on a long-term basis. Sustainability from the commercial perspective was seen to involve an analysis of the method of determination of the annual allowable cut, of the effectiveness of forest renewal plans and practices, of the risk of uncontrollable inventory losses, and of the effects of harvesting on long-term site productivity.

The determination of AAC is a Forestry Branch responsibility. It was found by the consulting team that inventory data are adequate and current, and unlikely to pose a threat to sustainable harvest through inadvertent overharvesting. Actual volumes cut have exceeded inventory estimates, indicating that generally inventories are conservative. Further, both cull factors and rotation times tend to be conservatively estimated, resulting in little risk in overcutting where AAC guidelines are followed. The conclusion was that levels of present harvesting and renewal will permit forestry operations to be sustained in perpetuity at the proposed rate.

From the perspective of the sustainability of commercial forestry, mechanical site preparation, herbicide treatment for competition control, thinning, and improved seed stock were seen to have no significant long-term impacts. The use of herbicides was identified as an important and necessary management tool. Risks to long-term soil fertility were identified where undesirable operating procedures prevailed: compaction from excessive travel by equipment, removal of biomass leading to nutrient cycle changes, and from the piling of limbs and tops at roadside landings. Short and intensive biomass harvesting may remove nutrients and reduce reserves to the point where long-term productivity is threatened. It was noted that the current state of knowledge regarding the effects of harvesting and renewal on productivity in the longer term is incomplete for site-specific assessments.

It was felt that there were significant risks to inventory depletion that would threaten the long-term sustainability of the FML operation. Fire in the 1980's exceeded the standard 12% AAC built-in margin of safety, and could well continue if a trend to increasing dryness prevails. Losses of inventory due to public policy decisions were seen as a potential risk during the period of the plan. Synthen stated that any further reduction in available inventory on the FML, regardless of source, would represent a serious threat to the commercial viability of the Pine Falls mill.

Ms. Ruth Marr, of Marr Consulting and Communications, and a member of the core Synthen Resources Limited team, presented the portion of the EIA which considered sustainability from the point of view of natural forest ecosystems. The analysis proceeded utilizing concepts about sustainable development (from the World Commission on Environment and Development [WCED] and from the Manitoba Roundtable on Sustainable Development), plant ecology, and ecologically sustainable forestry (from the International Union for the Conservation of Nature and Natural Resources [IUCN]). For the EIA, four levels of assessment were established to determine impacts within: 1) the overall diversity of the FML, 2) the structure, composition, and diversity of individual sites, 3) diversity in terms of numbers of species present, and 4) the genetic diversity of individual species.

It was found that there were few precedents to define ecologically sustainable forestry in the literature, and a lack of consensus in the definition of concepts and criteria for evaluation. The consultants chose to promote the IUCN concept of the "three-forest" system -- farmed, modified, and natural forests -- as a framework for addressing the notion of ecological sustainability. The "modified" forest zone (where several values of the forest are promoted) was interpreted, in the case of harvesting within the FML, to be represented by the areas where natural regeneration is utilized

after harvest. No numerical guidelines exist for the optimum balance of the three forest types, beyond indications that the modified forest should be the largest sector and that monoculture should not dominate at the expense of diversity. Later responding to a question as to the fit of the three-forest concept with the open, restricted, and closed areas of Nopiming Park, Ms. Marr admitted that the fit was not as clear as in other parts of the FML. She suggested that this was due to the fact that there are no clear guidelines as to what is allowed in each designated zone. She did feel, however, that it did fit inasmuch as there was a clear partitioning of the forest regarding forestry usage.

Ms. Marr, while noting that forestry operations will inherently affect the general landscape of the FML, suggested that the Eight Year Plan would retain the overall diversity of the FML area. The current patchiness of the forest within the FML would be retained; major tree species would likely to be represented in most successional stages, barring the inordinate action of fire. In terms of species composition, two opposing influences exist: harvesting causes increases in early successional species (jack pine and hardwoods), and renewal has favoured softwoods (spruce). There is only inconclusive data to suggest the long-term effects on overall variability, and no existing standard for a "correct" composition. The significance, from an ecological perspective, of a shift in the balance of softwood/hardwood is unknown.

A more detailed assessment of impacts to old growth forests on the FML is hampered by difficulties in definition, a limited and perhaps incorrect database, and the lack of provincial guidelines on this issue. Old growth forests are conventionally understood to be in a late successional or climax stage, and sustainable forestry calls for their preservation. With the fire history of the FML, the prevalence of jack pine (an early successsional or disturbance species), and with the extreme age of some quite small spruce, decisions regarding old growth become ill-defined. The consultants stated that there is relatively little old growth on the FML, and that most of the older stands of white spruce would be reduced during the eight year period.

The next level of assessment concerned the narrower focus of the compositional diversity of individual sites, and involved a review of the capacity of the sites for renewal, and of an identification of unusual forest stands or ecosystems. The evaluation of renewal capacity was based on regeneration survey data. Two areas of probable impact were indicated: jack pine stands on rock ridges (potential loss of soil and seed), and wet lowland sites (tendency to become wetter). The 1989 regeneration surveys indicated problems in 22% of such sites. Ms. Marr identified the lack of data regarding site renewal as a key issue, and therefore as a potential source of risk.

In the case of unusual stands or ecosystems, it was pointed out that 11% of the FML is closed to logging. Additional unique or important areas may exist on the FML, but have not been identified by site, or by inclusion within ecological reserves. Additional areas may be identified within the Manitoba Lowlands region particularly. A general lack of data was identified in this area, and the need for clarification of policy as to the role of the company and of the nature of its responsibility.

In the case of the numbers of commercial plant species present on the FML, it was indicated that there would be no probable impact within the period of the Plan.

Ms. Marr said that the loss of genetic diversity, given the patchiness of harvest and the mixture of regeneration methods, would be quite unlikely.

RECOMMENDATIONS FOR MITIGATION

Synthen's EIA concluded that the risk of serious environmental impacts resulting from the proposed operations would be small. Inherent features of topography, diversity, and stand size were proposed as naturally mitigating factors. Mitigation measures which were recommended included modifications to technical practice, improved baseline data, and more clearly defined policy as an operating framework. Specific principal mitigative measures proposed were:

- Harvesting practices that left limbs and tops at the stump would alleviate concerns for nutrient removal, site disturbance, and debris concentration. Modified harvesting and forwarding systems, such as Norcar, were identified as desirable.
- Harvesting in sensitive areas such as jack pine ridges should be controlled.
- Abitibi-Price should hire or otherwise secure the services of a staff biologist to integrate other non-commercial forestry objectives within the operation.
- A reduction in the number of chance roads was specified.
- The provincial government should increase fire and insect prevention programs to protect the commercial sustainability of the FML operation.
- Ecological land classification techniques (modelling, ecological rotation) should be evaluated.
- A need was identified for retrospective inventory analysis to better understand the long-term changes on the FML
- A variety of methods were recommended to improve the reliability of the AAC, thereby ensuring commercial sustainability.
- A policy framework for land withdrawals, the protection of old growth forests, and endangered spaces should be developed.

- The "three forest" policy should be adopted as a means of interpreting ecologically sustainable forestry.
- Long-term studies of site regeneration should be undertaken.
- The rationale for establishing renewal budgets should be reviewed to determine the appropriateness of the current allocation.

RECOMMENDATIONS FOR MONITORING

Synthen identified a variety of gaps in data, particularly relating to the longer term, coupled with increased expectations for evaluation and accountability in forest management. The formation of a "Stakeholder's Monitoring Committee" with a mandate to monitor performance on the FML was suggested. Formal evaluation of the development of baseline data should occur in approximately three years. Furthermore, developments in the field of forest sustainability should be monitored by the company in the scientific literature.

Vegetative environment

Ms. Marr said that no ecological land classification system exists for Manitoba. An approach which followed that of previous work in Saskatchewan was used by the consultants to identify six major vegetative ecosystems for the purpose of description of the vegetative environment of the FML. Within this topic heading, the potential occurrence of rare flora was also identified to be significant for analysis, although no systematic surveys exist.

PREDICTED IMPACTS

One potential impact of forestry activity is the potential loss of rare flora through either direct damage, habitat destruction or alteration, or indirectly through improved access. Summer harvesting poses a greater potential threat than winter operations. Clear cutting would be potentially more detrimental than selective cutting. The lack of information on the distribution of rare plants within the FML makes it difficult to assess the magnitude of this potential impact.

Impacts on the FML vegetation depend on site conditions, the nature of the operation, and ecosystem type. Damage to the herbaceous layer will be greater with track-mounted, rather than wide-tired, harvesters. The jack pine/bearberry/reindeer moss vegetative ecotype seems particularly

vulnerable to harvesting and renewal disturbance. Removal of cover makes these sites drought prone, and regeneration efforts with drag chains may promote erosion and soil loss.

RECOMMENDATIONS FOR MITIGATION

As mitigation with respect to harvesting has been discussed in the section on the Forest Resource Environment, this section deals entirely with mitigation regarding potential impacts to rare flora:

- Improvements should be made to the knowledge base concerning rare plants.
- Guidelines need to be developed for pre-activity surveys to check for the presence of rare plants.
- The provincial government should develop relevant regulations and guidelines under the existing Endangered Species Act regarding rare plants.

Terrestrial wildlife environment

The Abitibi-Price FML area contains a variety of habitats and wildlife species. Habitats in the Canadian Shield tend to be less productive, and individual species more vulnerable to human presence than habitats and species at similar latitudes. Wildlife often require large territories containing specialized feeding, nesting, or loafing areas in an environment where plant growth produces scattered, limited food resources.

The Forest Management Guidelines for Wildlife in Manitoba (exhibit 17) promote an integrated approach for forest and wildlife management concerns. Impact resulting from logging activity depends to some extent on the "range balance" achieved: the mixture of food and cover for wildlife species remaining, and the size and shape of these blocks. Wildlife management concerns also arise from the increased access provided by logging roads.

Ms. Marr indicated that there are over 800 moose within the study area, with indications being that the population is either holding or declining. Mature to overmature mixed-wood stands, offering coniferous thermal cover and deciduous browse offer the most important winter range. Information on important summer range and calving sites is lacking.

Three herds of woodland caribou are known to exist within the study area: Owl Lake (40 head), Sasaginnigak (150 head), and Aikens Lake (15 head). The Owl Lake herd is the most southerly in Manitoba, and located largely within the FML. A primary source of food for woodland

caribou is arboreal lichen found in mature and old growth stands of conifers. Woodland caribou are listed as a vulnerable species, and individual herds may be subject to extirpation. Ongoing studies of these caribou are expected to report at some time in the winter of 1991-92 or spring of 1992. Otherwise, it was stated that there is little information available for a quantitative assessment of impacts.

Little detailed data exist for furbearers except for that found within the trapping record of furs sold. Wolf, marten, and wolverine were indicated to be of particular interest in terms of potential impacts of forestry operations.

Breeding population estimates for waterfowl within the FML are lacking. Round, Maskwa, Turkey, Garner, Moose, and Shallow Lakes have been identified as areas significant during migration. Bald eagles and osprey are considered uncommon within the FML.

The FML is believed to include some of the best great gray owl breeding habitat in Canada. Studies in Manitoba indicate that great gray owls have a marked summer habitat preference for old growth tamarack bogs. Manitoba's provincial bird, and one which has been designated as vulnerable, the great gray owl can be considered important in the consideration of impacts. The DNR has developed draft guidelines for its management.

Existing sites of colonial nesting birds have been identified for herons and gulls. Three heron rookeries of approximately 40 nests each have been noted within the FML. These are vulnerable to disturbance by logging and by marsh drainage.

A number of important or critical wildlife habitats were identified. These include: woodland caribou concentration areas, moose winter ranges, old growth forests or tamarack bogs, and colonial nesting sites.

PREDICTED IMPACTS

Ms. Marr chose to emphasize several initiatives which, it was felt, would impinge on the discussion of potential impacts to wildlife of harvesting by Abitibi-Price. Co-operative work between the company and the Wildlife Branch is ongoing with respect to caribou and great gray owl research, and the Integrated Wildlife and Forest Management Project, which is to develop habitat inventories and aid in species protection. Co-operation has been an integral part of work with the Integrated Resource Management Team. The Happy Lake road discussions were also

mentioned as an example of the co-operative and consultative approach that the company has been developing with regard to wildlife issues.

Potential impacts on moose may be attributed to hunting associated with roads, to harvesting, and to silviculture activities. It was indicated that impacts arising from Abitibi-Price's operation are likely of a greater magnitude than any other source, with the exception of fire. Positive effects may accrue in some areas from habitat changes. Negative impacts may result from loss of thermal cover, increased death of moose from brainworm spread by increasing deer populations, noise disturbance, and increased hunting and predation impacts. Tree harvesting has opened forest areas and improved browse, which have led to an increase in the deer population of the area. There are insufficient data to quantify the various impacts, but it is indicated by the consultants that increased hunting pressure related to access is considered the most serious impact. The Happy Lake road and Beaver Creek/Saxton Creek areas were named as containing some of the best remaining moose habitat.

The majority of the impact assessment with respect to caribou focuses on the Owl Lake herd, due to the overlap of its known range with the proposed company activity. There are probable negative impacts on caribou from forestry operations. Improved access created by roadbuilding may increase mortality due to legal treaty Indian hunting or due to poaching, or from the use of roadways as travel corridors by wolves. The key habitat concern indicated was that of the loss of lichens in the winter range of caribou. The narrow forage niche makes caribou sensitive to impacts, especially in winter with its other stresses. The impact statement indicates that a gradual decline in population is a possible, if worst case, scenario. The creation of "edge" habitat in cutting favours deer and moose over caribou, and enhances the potential for transmission of brainworm, which is fatal to caribou. Noise and disturbance from company operations were indicated as minor impacts, with more significance during winter or calving.

Ms. Marr also pointed to the stresses on the Owl Lake herd, particularly, from non-forestry sources, such as the proximity of Highway 314 in Nopiming Park to calving areas and summer range. Fire was also said to be detrimental to caribou in the removal of lichen.

Ms. Marr also suggested that several policy issues should be discussed in relation to these potential impacts on caribou. One issue is the likelihood of success of mitigation; another the probability of herd survival, even with mitigated forestry impact. Ms. Marr pointed out that commitments had been made to Abitibi-Price regarding a guaranteed wood supply within the FML,

and suggested that there are limits to availability of wood supply from other sources. A lack of provincial management planning for the species, and conflicts within the multiple-use mandate of Nopiming Park were also highlighted as issues which require attention.

Potential impacts on furbearers are difficult to assess, due to a lack of information on populations. It was stated that the implementation of the general wildlife guidelines will likely benefit lynx, fox, and wolves by enhancing the habitat for their prey species. Within the constraints of the current information, it is likely that marten, fisher, and ermine will decline due to the removal of preferred habitat. It is suggested that mink, otter, muskrat, and beaver can potentially remain unaffected if adequate riparian buffers are maintained and water quality is protected.

Responding later to a question regarding the adequacy of buffers in protecting aquatic mammals, Ms. Marr stated that buffers on the FML are discussed with the Integrated Resource Management Team on an ongoing basis, and that Natural Resources can express their preferences. To date, smaller streams have tended to have smaller buffers, and Ms. Marr suggested that this might not always be appropriate from the biological perspective.

In terms of small mammals, it was suggested that species composition may change within a particular area due to harvesting, but that indications were that overall densities would likely not decline. The significance of such changes was not at all clear.

Ms. Marr said that in the case of waterfowl impacts, the greatest area of concern surrounded Garner Lake and River, where significant waterfowl habitat intersects with proposed harvest areas. Degradation of water quality, potential for increased access and hunting pressure, noise and disturbance, and loss of nesting habitat are the primary potential impacts. It was considered that due to the adherence of buffer guidelines and the localised scale of operations, these impacts would be minor over the course of the Eight Year Plan.

Impacts upon eagles and osprey relate to disturbance during nesting or fledging, removal of nesting or perching sites, and to the degradation of water quality. The use of winter cuts and adherence to buffer guidelines around waterbodies and known nesting sites should minimize impacts on these species. However, there is a recognized lack of site-specific data, particularly regarding osprey, and it is indicated that any quantitative prediction is not possible.

It is predicted that disruption of prime breeding and foraging habitat represents the greatest threat to great gray owls from forestry activities. Ms. Marr stated that given its status as a vulnerable species, any disruption of prime habitat should be avoided or minimized. No new roads are proposed for areas of tamarack harvesting. Less than 2% of existing tamarack are scheduled for cutting during the eight year period, and most will be selectively cut. No silviculture is proposed within any of the tamarack stands. It is considered that negative impacts will be minor, and that in some areas, positive results may occur from selective opening of the forest cover.

Impacts on colonial nesting birds centre on the great blue heron, as populations of gulls are considered to be on the increase. One heron rookery in the Bird River area is potentially at risk due to scheduled harvesting. Herons are known to be quite subject to noise disturbance. A number of measures should minimize impacts to this rookery, in the opinion of the consultants: harvest will occur in autumn after migration, a 200 m buffer has been established around the colony, road access has been restricted, and a road re-routed.

Ms. Marr stated that it is difficult to estimate impacts to other birds, due to a lack of baseline data and lack of understanding of such impacts elsewhere. Habitat changes are thought to be both potentially harmful and beneficial.

Reptiles and amphibians may be vulnerable to forestry impacts in aquatic, riparian, and moist forest floor habitats. Buffer zones remove the concern in the first two habitats; the third is the area most likely to present the opportunity for impacts. Drying of the forest floor due to canopy removal in harvesting would likely locally affect salamanders, particularly. It is felt that these impacts cannot be quantified.

In terms of rare and endangered species, impacts to woodland caribou (already discussed) and to wolverine would seem most potentially negative. Little is known about wolverines generally, and even less about their presence on the FML. Predictions as to impacts remain speculative.

Ms. Marr presented a summary of key impacts that were identified within the EIA. Habitat alteration as an overarching description is common as the source to both positive and negative impacts. The cutting of old growth forest is in all probability negative for all species utilizing this habitat. In other areas, harvesting may be positive for some species (moose, deer) in the promotion of browse. The fragmentation of specific habitat needs is identified as a concern, but one for which

adequate information is not thought to exist. The fire history of the FML has certainly also contributed to patchiness of habitat types. Another key area of impact highlighted was that of access and associated wildlife mortality, which is considered to be a significant potential impact. Noise and disturbance is another general category to be addressed, for which the timing and location of proposed activities must be carefully considered. Finally, the lack of site-specific information is identified as a significant hindrance to the analysis of the nature and magnitude of potential impacts.

RECOMMENDATIONS FOR MITIGATION

It is suggested that the existence of a vegetation mosaic is the key to diversity of wildlife. However, since forestry operations provide a continual supply of areas in early successional stages, a major effort should be placed in the protection of mature habitats, and protection of adequately-sized blocks for long-term viability. In terms of mitigation for wildlife, it must also be recognized that techniques proposed to aid one species may be incompatible with the needs of other species.

Ms. Marr proposed a series of general or policy-related mitigative measures:

- Abitibi-Price should consistently apply the Wildlife Guidelines for Forestry in consultation with the Wildlife Branch.
- The Wildlife Branch should prepare regional management plans for key species, and continue to identify key habitat areas.
- An improved database on wildlife distributions and forestry impacts should be a priority issue.
- The company should ensure the consideration of wildlife issues early in the planning process.
- The consultative process on these issues begun between the company, the Province, and other groups should be maintained and facilitated through a body such as the proposed Stakeholders Monitoring Partnership.
- Education of company field supervisors and third-party operators concerning wildlife and habitat issues should be provided.
- Buffer management should be reviewed by the Province in time for the next five year plan to consider such issues as selective cutting within these zones.

Ms. Marr also presented a series of recommended species-specific mitigation measures:

- Measures should be enforced under new regulations within the Wildlife and Lands Acts to control access and hunting pressure on moose populations in the Happy and Saxton Lake areas.
- Consultation with local moose hunters should be encouraged, and the possibility of moose co-management explored.

- Efforts should be made by the Wildlife Branch to identify critical moose calving areas or mineral licks.
- Limits to access and to harvest of caribou should be maintained (as in Game Hunting Area 26), and possibly extended in the case of the George Barker Game refuge.
- The cooperation of local First Nations regarding woodland caribou harvests should be sought by the Province through consultation, mutual education efforts, and potentially, co-management.
- Results of the ongoing caribou study should be interpreted and released by the Wildlife Branch, and reviewed with Abitibi-Price prior to operations in the Happy Lake area.
- Cutting plans for the Garner Lake area should be reviewed with the Canadian Wildlife Service for the purpose of protecting waterfowl.
- Management plans for eagles and osprey should be developed by the Province.
- Identification and compilation of data concerning eagle and osprey nesting sites should be undertaken by company operators and the Province.
- Existing mitigation regarding great gray owl habitat should be continued.
- Mitigation following that at the Bird Lake heron rookery should be extended to other similar sites as discovered.

RECOMMENDATIONS FOR MONITORING

Monitoring of the results and effectiveness of mitigation practices was identified as an important requirement. This can be seen to apply to all species, but to have particular significance for important localized circumstances such as heron rookeries, or to the relatively endangered state of the Owl Lake woodland caribou.

It is felt that the recently initiated Wildlife Habitat Study will contribute significant information to fill some of the data gaps regarding wildlife and forestry. It is suggested that the study incorporate alternate strip sites and jack pine ridges specifically, as sensitive habitat areas. No other large monitoring program is recommended at this time. There may be a role for the Stakeholders group in the planning and evaluation aspects of the monitoring process.

Responding to a later question regarding the makeup of a stakeholders' group, Dr. Ashton concluded that it must have wide participation and that stakeholders must feel that the mechanism is effective. He also felt that it may be better to build on existing institutions and mechanisms than to create new ones.

RESIDUAL IMPACTS

It is considered likely that impacts to wildlife will remain despite mitigation efforts. The greatest concern is for the Owl Lake woodland caribou herd, which is already small in number and has little access to alternative habitat. The consultants reported that, in their opinion, there is little long-term concern for moose in the FML if access and hunting pressure is controlled.

Aquatic environment

The aquatic environment of the FML has been described through a waterbody classification system developed for the FML by the Fisheries Branch, which represents a summarization of known conditions. The classification identifies particularly sensitive aquatic environments such as the lowest stretches of the Manigotagan and Wanipigow Rivers, and larger lakes. Other aquatic baseline data are also available for impact prediction, including surveys of 14 lakes in Nopiming Park, morphological and species surveys for various lakes, non-systematic walleye spawning surveys, and angling success surveys for several larger lakes.

The federal Fisheries Act relates specifically to this topic, and prohibits "any work or undertaking that results in the harmful alteration, disruption, or destruction of fish habitat."

PREDICTED IMPACTS

Dr. Ashton stated that all aspects of forestry operations have the potential to create negative environmental impacts. Changes in hydrology, the loss of riparian vegetation, blockage of water flow, the drainage of wetlands, erosion and subsequent sedimentation, and chemical pollution are all possible impacts resulting from forestry. The biological effects of such habitat changes can include migration or elimination of species, habitat removal, changes in biological productivity, and toxicity among aquatic organisms.

Dr. Ashton said that in their review of the background data, the literature, and their experience in site investigations within the FML, several key issues were identified relating to aquatic impacts: stream crossings, operations in sensitive environments, enhanced access, and use of chemicals (investigated in a later section).

Six major stream crossings are proposed in the Plan, along with additional ice crossings. Crossings are achieved by either bridges or culverts which are constructed according to the

Recommended Fish Protection Procedures for Stream Crossings in Manitoba (exhibit 5). The location and timing of construction is determined in consultation with Fisheries Branch staff. Temporary bridges may be constructed where it is recommended that access be controlled. With adherence to the guidelines and continuing dialogue with the Integrated Resource Management Team, it is suggested that impacts arising from operations under the Plan should be localized, short-term, and mitigable.

Risks of negative impacts have been identified in an additional 15 specific areas. These involve three distinct situations: 1) non-company operations on the lowest stretches of rivers, 2) operations adjacent to Nopiming Class I lakes, and 3) Class I and Class II lakes in the Wanipigow/Bissett area. Potential impacts include: sedimentation and decreased water quality, increased stream temperature, channel debris, and physical habitat effects.

Ample evidence exists that improved access may lead to reduced angler success. Increased pressure on fish (particularly sport) populations is a predictable impact of improved access.

No net loss in fisheries habitat need result from proposed operations, given continued application of relevant mitigation measures.

RECOMMENDATIONS FOR MITIGATION

Dr. Ashton suggested that the generally flat to hummocky terrain of the FML was not generally a high risk situation with respect to the aquatic environment. He stated that particularly with respect to stream crossings and buffer strip management, their review did not provide evidence that forestry practices as conducted on the FML or proposed in the Plan would contribute to any significant aquatic environmental damage. It was stated that the controls on the operations, which include the approvals process, the crossings guidelines, and the buffer zone standards, are effective.

A number of additional specific mitigative measures were proposed:

- Proper selection of harvesting equipment relative to the site and site conditions should be observed.
- Preservation of streamside vegetation is essential, with no-cut buffers along the immediate riparian bank.
- Petroleum spills and waste deposit in or near aquatic environments should be avoided and carefully regulated.
- The operations of non-company operators should be carefully controlled.

- Revegetation of cut or scarified sites should occur rapidly after completion.
- Cutovers should be designed to minimize impacts on snowmelt and runoff timing and peak flows.
- Access to fish resources along forestry roads should be strictly regulated.

RECOMMENDATIONS FOR MONITORING

Dr. Ashton stated that site-specific information for the FML area is sparse, and that baseline data development would be useful. Pre- and post-harvest studies are recommended of the key aquatic environmental components in lake and river systems adjacent to proposed forestry operations. Guidelines for forestry operations should be ongoing, and develop as new information becomes available. The Stakeholders group could serve to evaluate the effectiveness of current mitigation.

Land and resource uses

This section of the EIA discusses potential impacts to various non-forestry land uses of the FML area.

Wild rice grows naturally in many FML waterbodies. There has been an important traditional subsistence harvest of rice by aboriginal peoples, and there is currently a significant commercial harvest. The 88 wild rice licences on the FML area have produced an average of 270,000 kg annually over the last ten years.

Areas for mineral exploration and exploitation are concentrated in two greenstone belts on the FML. The tantalum mine at Bernic Lake is the only currently active mine.

Part of Atikaki Wilderness Park and all of Nopiming Provincial Park is located within the FML. One of the water routes used for recreation in the FML includes a portion of the Bloodvein River, which has Heritage River status. A total of 614 cottages exist within the licence area, as well as a number of established campgrounds, and nine lodges and outcamps. Other recreation within the area would include snowmobiling, berrypicking, cycling, and picnicking.

Heritage resources are those that are significant from either an ecological or a historical/archaeological/cultural perspective. No areas have been previously designated within the

FML by either the provincial Ecologically Significant Areas Program or the International Biological Program, although sensitive areas such as caribou wintering or gray owl habitat are known to exist. Identified human heritage resource sites are widespread on the FML, and include settlements, campsites, pictographs, and burial mounds. Areas along water and distinctive sites, such as high points of land, are probable locations of other, yet undiscovered, sites.

Manitoba Hydro has identified four locations on the Manigotagan River as potential small-scale hydroelectric generation sites, though there are no plans for their development over this period. Transmission lines proposed for the east side of Lake Winnipeg would traverse a portion of the FML.

Three Registered Trapline sections, with 54 Registered Traplines and six community lines, are present on the FML. There are fewer active trappers recently, and a decline in revenue from fur sales. It is suggested that since furbearer populations are stable or increasing on the FML, lower fur prices and increased costs have contributed to this situation.

Three First Nations communities are located immediately adjacent to the FML: Sagkeeng, Little Black River, and Hollow Water. These communities have long been users of the forest and its resources, for cultural and material reasons. Fishing, hunting, trapping, and the harvesting of wild rice are among the uses made of the area resources. Activity for aboriginal people within the FML area also includes spiritual and cultural value. An outstanding treaty land entitlement claim filed in 1978 by the Sagkeeng First Nation has not been recognized to date by the federal government.

PREDICTED IMPACTS

In terms of wild rice production, Dr. Ashton stated that current practices and controls would provide adequate mitigation. The risk of significant water level alterations due to proposed forestry operations is thought to be minor, and has not been in evidence to date. Improved access could be positive in terms of transportation for those picking rice, and negative in the threat of the loss of equipment through theft. There is the possibility of the chemical contamination of lakes where rice is grown.

Impacts to mining are thought to be positive overall, with improved access for exploration. The potential loss of claim stakes through harvesting has been identified.

Ms. Marr said that four key concerns with general respect to parks and recreation were identified during the course of the EIA: park objectives and guidelines, access impacts, herbicide use, and the philosophical question of logging in parks. Though interim management guidelines exist for Nopiming Park (exhibit 7) and forestry operations seem acceptable under them, it is felt that a clear statement of overall policy is required. In terms of increased access to the parks from logging roads, impacts may be positive (ease of access) and negative (increased pressure). Ground application of herbicide to 275 hectares is proposed within the park. It is considered consistent with park policy, though opposed by some groups.

In terms of site-specific impacts within parks, Ms. Marr noted the potential impacts to caribou which were previously discussed. Concerns for potential impacts on recreational canoe routes focus on aesthetic experience, river crossings, noise disturbance, and the adequacy of buffers. Concerns regarding impacts due to improved access in parks emphasize the reduction of wilderness values, and the increased user pressure.

Potential negative impacts to heritage resources exist from physical disturbance or destruction of the site material. These impacts may come about through the process of road construction, the building of river crossings, or in normal harvesting and site preparation. Bridge or culvert crossings traverse the areas of highest potential for heritage resources, while disc trenching and shear blading create the most widespread disturbance.

The populations of furbearers can be influenced by harvesting activities, with resultant impacts on trapping income. As well as this habitat loss, loss of trails, harassment of wildlife, loss of equipment, and improved access are all potential impacts. Dr. Ashton suggested that the overall impact of reduced demand for fur, and thus reduced prices, would likely create a far more significant impact on trapping than that arising from proposed forestry.

It is suggested that the commercial and economic interests of the First Nations communities near the FML will not be threatened by proposed forestry operations. Direct employment opportunities through harvesting and seasonal reforestation work are expected to be similar or expanded from the present (more of this will be covered in the section on socioeconomic impacts). It is expected that moose and deer populations, the basis of subsistence hunting, will not be negatively affected during the course of the Plan, although access and overhunting remains a concern, particularly with the threatened caribou herds. In terms of cultural values, Dr. Ashton

suggested that cultural and spiritual harmony with the forest may be disrupted by forestry operations; effects on the forest affect the spirit of the people.

RECOMMENDATIONS FOR MITIGATION

- In terms of mitigation of impacts to wild rice production, it is expected that current practice and controls are adequate for mitigation purposes.
- Proposed retirement of chance roads and the potential to close problem permanent roads should alleviate problems of increased access.
- The company should check mineral claims maps prior to harvesting, and flag claim posts where identified.
- The EIA concluded that the existing mitigation measures, and the more stringent application of these measures within the parks, are adequate to protect the recreational values of park users.
- It is recommended that the existence and proximity of Atikaki Park should adequately protect wilderness values.
- The issue of logging in parks should be debated at the appropriate provincial policy level.
- Preliminary field surveys should be undertaken of all high potential heritage sites located within operating areas.
- Sites with high heritage potential should be included in buffer zones.
- Proposed operating sites should be checked against current maps of known heritage sites.
- Trappers should be contacted prior to the commencement of harvesting on their traplines and consulted regarding their trails and significant sites, as has been done to some degree in the past.

It was suggested that, clearly, aboriginal people are major stakeholders in the FML area.

- The commercial involvement of First Nations in forestry activity should be reviewed, and expanded where possible.
- Mechanisms should be developed and implemented to provide First Nations formal participation in resource-use decision making, perhaps through the proposed stakeholders committee.
- Enhanced communication between First Nations and the company regarding cultural values and sites is recommended for the protection of the spiritual values of local aboriginal people.

RECOMMENDATIONS FOR MONITORING

The EIA proposes that monitoring requirements regarding land use may be met in many cases by the Stakeholder's Partnership which is comprised of the various forest resource users.

In terms of park uses, it is suggested that baseline biophysical data is inadequate for rational decision-making in Nopiming Park. The dialogue which was established between Abitibi-Price and various environmental groups should be maintained directly to monitor concerns and progress.

Ongoing monitoring regarding heritage resources should be focused on assessing the adequacy of mitigation at an intermediate point in the Eight Year Plan.

Likewise, it is recommended that the level of native participation in commercial forestry activity be reviewed midway through the Plan.

Socioeconomic, public involvement, and public health environment

Mr. Harold Westdal, of H.N. Westdal & Associates, and a core member of the Synthen Resources Limited team, presented the portion of the EIA which primarily dealt with evaluation of socioeconomic impacts. The social components identified for analysis of impacts by the Technical Advisory Committee guidelines were the local economic uses (formal and informal) of the forest, local infrastructure, community values, and employment opportunities.

There are three Indian reserves, eight other communities, and the LGD of Alexander and the RM of Lac du Bonnet in the study area. Hydro generation, mining, forestry, tourism, trapping, and service industries are among the primary employment sectors in the region. Sharp contrasts are found between communities in terms of both employment participation rates and family income. Aboriginal communities in the area have established employment participation rates much lower than either the local non-aboriginal communities or the provincial average. The communities of Pine Falls and Pointe du Bois exceed the provincial income average, while Lac du Bonnet and Powerview are at some 80% of the provincial average. The aboriginal communities have incomes as low as 50% of the average for the province as a whole.

Within the context of a later question it was pointed out that though the aboriginal populations make up at least 30% of the study population, they participate in approximately 17% of the FML woodlands operations. Responding to a question regarding the sufficiency of the level of aboriginal employment within the FML operation, Mr. Westdal stated that it was clearly expressed within the First Nations communities that they considered their opportunities to be insufficient. Mr. Westdal went on to say that there seemed to be very little opportunity of increasing Native

employment within the eight years of the Plan since the workforce is projected to be static over this period. To a question regarding the level of employment which Abitibi had targeted for Native groups, Mr. Westdal stated that there is no specific numerical target. Regarding a question about Abitibi's control over forestry resources hindering opportunities for band-controlled forestry operations, Mr. Ashton indicated that there would seem to be no obstacle with respect to access to underutilized hardwood on the FML.

The mill and woodlands operations of Abitibi-Price provide 616 person years of employment (928 jobs); the 1990 operating budget allocated $23.48 million for wages, salaries, and payments to contractors. These figures do not include the labour force associated with the Integrated Wood Supply Area or other wood sources. Excluding the mill, it is estimated that employment income for all persons working in FML woodlands operations is $5.08 million annually.

Later responding to a question concerning the sustenance of the community without the presence of the forest industry, Mr. Westdal said that the probability of another industry maintaining the level of employment was extremely unlikely. Mr. Ashton replied that the forest industry was far and away dominant in the community and the region.

The consultants consider that public participation was an important part of the EIA process. The public participation component was designed to increase public awareness of the forestry proposal, determine public concerns in this regard, facilitate discussion with those interested, and aid in focusing the study upon areas of concern which were identified. A "contact list" was created which included communities, development organizations, trade unions, the Manitoba Trappers Association, the Manitoba Lodges and Outfitters Association, a cottage owners association, environmental groups, and elected officials.

PREDICTED IMPACTS

Regional concerns regarding the impacts of the proposed forestry operations were identified through public meetings, written comments, and key person interviews in each community or municipal district. The key person interviews were the primary source of information.

Mr. Westdal stated that with respect to issues regarding the local economy, there was a sharp split within the local area in perception of the impacts of Abitibi's operations. The EIA concluded that non-aboriginal communities viewed Abitibi-Price as an excellent corporate citizen, and essential to the well-being of their communities and their region. On the other hand, aboriginal

communities viewed themselves as being largely excluded from the economic benefits from the forest industry, and that they have suffered negative health effects and loss of traditional country foods due to Abitibi's woodlands operations. The impact study suggests that aboriginal communities expressed some frustration over the limited opportunities for band-controlled forestry operations, given Abitibi-Price's control over the region. Aboriginal communities expressed some concern over logging in parks, whereas this was not generally encountered in the other communities.

All communities in the FML indicated some reliance on country foods, with aboriginal communities indicating the greatest use of these resources. Mr. Westdal stated that the overall availability of fish, berries, wild rice, and waterfowl will not be harmed by proposed forestry operations. Records of Treaty Indian kills of moose, deer, and caribou are not kept. However, impacts on these animal populations would have a probable impact on domestic consumption of these meats. Though the EIA concludes that it is difficult to estimate the social impact of a reduction in availability of wild meats, aboriginal communities expressed some concern over potential impacts to human health. Aboriginal communities expressed concerns about impacts to their traplines from forestry.

No change in employment statistics is forecast over the course of the Plan. Frustration in the aboriginal communities is predicted to continue over this issue. As well, where available employment activity in forestry operations is individualized for aboriginal participants, stress may result from the conflict with the traditional values of sharing resources within the community. The EIA states that this is an area of perceived impact which should be addressed.

Health concerns focused on the need for improvements in health services in the region. In terms of impacts for forestry operations, non-aboriginal public health concerns focused on the potential health effects of forestry chemicals, whereas aboriginal concerns focused on loss of access to traditional foods.

RECOMMENDATIONS FOR MITIGATION

Mr. Westdal said that it was important to recognize that Abitibi-Price was a good corporate citizen, and that a reduction in the scope of their operation would have a serious negative impact on the general population of this region.

- No additional mitigation measures beyond existing programs are proposed for general public health, and occupational safety.

- Abitibi-Price should review contracting and employment practices to increase aboriginal participation in the forest industry, as new opportunities become available, and to ensure equitable distribution of benefits arising from forestry operations.
- The company should continue to work with provincial agencies to protect and enhance big game populations which are important to the aboriginal diet.

RECOMMENDATIONS FOR MONITORING

It is recommended that Abitibi-Price continue its existing programs for monitoring occupational injuries. In terms of public health, periodic monitoring of water and soil in the area should be considered.

Special topics

PESTICIDE USE

The only pesticide used by Abitibi-Price in the FML is the herbicide "Vision". Natural Resources, Highways, and Manitoba Hydro also use herbicides in their operations. Vision, the active ingredient of which is glysophate, is a broad spectrum, post-emergence herbicide which is used by the company for site preparation and conifer release in mixed wood sites.

The herbicide is applied from both ground and air, although there is no aerial application in Nopiming Park. Over the eight years of the Plan, approximately 1% (0.7% by air, 0.3% on the ground) of the total productive forested area will be subject to treatment. Pesticide use permits are required of the company, as well as site-specific work permits for its use which specify conditions of use (buffers, container disposal). Abitibi-Price staff that handle pesticides are required to take training and obtain a Pesticide Applicator's Licence.

Responding to a later question regarding the degree to which aerial applications adhere to regulations, Dr. Ashton replied that there was a conscious effort to follow restrictions regarding wind speed and drift. Further, Mr. Westdal said that Natural Resources staff were also frequently on site for inspection during aerial application of herbicide.

The EIA summarized the characteristics of glyphosate: 1) it was found to have negligible volatility; 2) glyphosate degrades quickly in soil; 3) it is bound to soil particles by adsorption and is relatively immobile; and 4) it does not bioconcentrate.

Mr. Westdal said that in terms of effects on terrestrial wildlife, the literature is unanimous that glyphosate is unavailable in toxic doses at commercial application rates. Herbicides do alter habitat, but limited studies on the FML found there to be no indirect effects from herbicide application on songbirds, small mammals, and ungulates. The EIA concluded that there would be no direct toxic effects on aquatic vertebrate communities. In terms of indirect effects, it is suggested that glyphosate could not produce changes in aquatic plant communities at the rates of application utilized, and that glyphosate does not leach into waterbodies. It was also stated that normal use of herbicides would not significantly affect long-term forest productivity.

Manual or mechanical methods were analysed as alternatives to herbicide use. It was concluded that these methods have safety and environmental impacts greater than current chemical methods.

- It was stated that the current practices of Abitibi-Price encompass all of the mitigation measures that would be proposed: buffer zones, curtailment of drift, and proper operational procedures. No additional monitoring or mitigation measures were recommended.

LONG-TERM CLIMATIC CHANGE

This topic was not mentioned in the TAC guidelines, but seemed to relate to the subject of long-term sustainability, both of commercial forestry and of the forest ecosystem. Widespread scientific concern has been raised that rising concentrations of "greenhouse gases" will lead to global warming. Global warming could accelerate through combustion of fossil fuels, deforestation, and the release of chloroflourocarbons or methane. However, some theorists claim that inadequate knowledge of the carbon cycle (carbon migrations in the lithosphere, oceans, and atmosphere) makes any analysis inherently weak.

Dr. Ashton described the opposing movements of carbon in forest practices. The forest, which draws carbon dioxide via photosynthesis, stores the carbon in biomass and releases oxygen. Deforestation and combustion, on the other hand, reduce photosynthesis and release carbon as CO_2. Forest renewal and reforestation decrease CO_2, taking carbon up. It was stated that biomass removal from the FML reduces the amount available for decomposition. Though the quantification of the net amounts of these flows was not attempted, Dr. Ashton stated that the net effect of proposed operations is likely to be positive; the activities proposed under the Eight Year Plan would result in an overall reduction in atmospheric CO_2 and an increase in the carbon reservoir.

Global warming is not expected to have any impact on forestry planning over the duration of the Plan. However, global warming could affect long-term sustainability through shifting ecoclimatic regions, altering site productivity, and changing species composition.

In response to a later question regarding the influence of global warming on the regeneration potential of the forest in the area, Dr. Ashton stated that though a response would be highly speculative, it would seem that the drier, upland areas would have severe difficulties regenerating. However, he also stated that in some areas, this would be beneficial to growth.

Dr. Ashton was asked to what extent the current design of a renewal plan should accommodate anticipated global change. His reply suggested that, given the minor component on the FML of planted stock versus natural regeneration, and given the uncertainty of the current information regarding global warming, there was time available to take global warming into account.

- Proposed mitigation regarding climatic change would centre on the need to ensure reductions of carbon dioxide. These would include: quick renewal of cutover areas, reforestation of areas not sufficiently restocked, management for vigorous stands, provincial capability for rapid response to forest fires, and participation in the development of scientific knowledge regarding global warming.

FORESTRY ROAD ACCESS

Mr. Westdal stated that the study team recognized that the construction of forestry roads could have serious indirect consequences from improved access. Impacts can occur to big game populations, fish stocks, heritage resources, rare flora, and to tourism and recreation. However, mitigation is made difficult since public opinion is quite divided on this issue.

Mitigation is proposed by a combination of methods:

- Planning and design: greater use of winter roads, reduction of the number of chance roads, limitation of line of sight in sensitive game areas, and harvesting end-first with road retirement.
- Regulation regarding: road closure, bridge removal, hunting area closures and restrictions.
- Education and cooperation among stakeholders should provide the information base to avoid serious conflicts or impacts.

It was recommended that monitoring of big game populations should take place in the areas which have been subject to road and/or hunting closure. Compliance information could be acquired by company personnel keeping track of observed unauthorized access. The Stakeholder Monitoring Partnership should review the success of the program.

RECYCLING

Mr. Westdal noted that recycling was specifically referenced in the EIA guidelines. The company has been evaluating the options for significantly increasing the current use of recycled material, which is about 3% actual and 5% maximum. The impact of recycling on new fibre requirements is uncertain and was not included in the EIA analysis.

RESEARCH

Dr. Ashton stated that the forest management practices on the FML generally reflect the latest available information and technology. Company staff attend professional seminars and conferences, and communicate with their peers, academics, and researchers.

It was suggested that the company's financial and technical support of a variety of research initiatives had been dealt with in other sections of the EIA report. Their introduction of a geographic information system, establishment of the tree improvement program, and assessments of their intensive renewal practices seem to demonstrate that current ideas are incorporated in their practice. However, Dr. Ashton said that, despite its commitment to the usefulness of research, Abitibi-Price is a forest business, not a research organization.

- Company policy should be supportive and participate in the latest relevant research, as it has done.
- The company should maintain the latest technology and scientific base in its operations.
- An "open FML" policy should be maintained for public information and for scientific assessment by outside researchers.
- In view of the unique attributes of the FML, the EIA suggests that steps be taken to designate the FML as a national demonstration site for ecologically sustainable forest management.

Overview

Dr. Ashton concluded that, on an overall basis, there would be few unmitigable impacts as a result of forest management activities under the Eight Year Plan. These residual impacts will

include some compositional changes in the forest of a local, site-specific nature; increased resource use pressure; potential impacts to woodland caribou; and changes in perceptions of wilderness. It has been suggested that minor localized changes will occur. However, the study team do not consider that these will threaten the long-term sustainability of forestry operations, or of the forest ecosystem on the FML.

The consulting team suggested that the Eight Year Plan represents an important period for implementing the practices discussed throughout the EIA, and for solidifying the communication which has been established through the process of drafting the Plan and completing the EIA.

Dr. Ashton said that the many recommendations for mitigation and for action could be categorized into three general areas:

1) The issue of communication and stakeholder participation is critical. It is recommended that a formal mechanism be developed for this input. Either an expansion of the Integrated Resource Management Team or a new Stakeholders Monitoring Partnership may be appropriate.
2) Baseline data development is another crucial area. It is felt that all parties have a responsibility to specific data development on an ongoing basis, and require confirmation of this need. The determination of an appropriate share or role by government and industry is required in this process, and leads to the third general area identified.
3) Resolution of a number of outstanding resource-use issues must come at the policy level within government. The lack of management objectives for particular areas and resource uses was noted at several points in the EIA, and remains problematic to planned forest management, in the view of the consultants.

Abitibi-Price response to mitigation and monitoring recommendations

As previously explained, Abitibi-Price responded to the recommendations made by its consultants 23 August 1991, and made additional revisions to this response 19 September 1991 upon consultation with the TAC. These are contained within the Response to Mitigation and Monitoring Recommendations (exhibit 19). Mr. Dave Chown presented this material to the Commission using a condensed presentation version of the same document (exhibit 20).

Mr. Chown stated that of the 136 recommendations or issues presented in the EIA for mitigation, Abitibi-Price agreed in principle with 73%. Another 23% were identified by the

company as within the primary mandate of provincial government departments. These areas dealt with wildlife concerns, forest inventory, policy issues, baseline data collection, or with training programs. Mr. Chown tabled an excerpt of a letter to the company from C.D. Rannard, Director of Forestry Branch, in which Mr. Rannard suggested that it was the responsibility of the branches or agencies to carry out research or studies and to provide information.

In a further 4% of the EIA recommendations, the company proposed an alternative suggestion or modified the original recommendation:

- EIA, p3 - 100: The suggestion in the EIA for a staff biologist is not considered as urgent. The company feels that current needs are being met by on-the-job training and wildlife courses.
- EIA, p3 - 104: Responding to the concern that renewal practices may be causing a trend to increased softwoods, the company suggested that insufficient data has been analysed to date to draw conclusions. It was also highlighted in the EIA that the planting of softwoods in mixed forest areas tended to maintain the diversity of the area.
- EIA, p3 - 104: This section of the EIA discussed the issue of closures, endangered spaces, and old growth forests, and whether any further closures should be made for these reasons. The company response was that no specific mitigation was proposed since, from the company perspective, adequate wilderness areas (that is, areas closed to logging) existed within the FML. Continuing communication with Natural Resources and the public are seen to meet this concern.
- EIA, p5 - 119: The EIA recommends that cooperation and compromise may be required to integrate wildlife and forestry concerns, including potential large block removals from harvesting operations. The company responded that it has demonstrated a willingness to negotiate responsibly on wildlife issues in the past, but that it cannot accept any further large block removals due to the critical position of the FML wood supply in relation to mill viability.
- EIA, p6 - 64: The recommendation suggested that site preparation techniques be selected according to site conditions, and that patch scarification is preferable to disc trenching and shear blading. The company response was that current practice has evolved after much experimentation. The power disc trenchers have a life expectancy of several years yet, and it would be uneconomic to phase them out before that time.
- EIA, p7 - 35: This segment in the EIA concerns access issues in parks. The company wished to strongly state that legislation and regulation should not put Abitibi-Price in unfair competitive position in the North American industry.
- EIA, p7 - 35: The EIA in this section addressed the issue of the establishment of a long-term policy framework regarding timber management in parks, with an additional concern for baseline biophysical data within parks. The company agreed that a long-term strategic intent must be

established for park resources. However, the company stated that it requires the volume present in the areas designated as open within Nopiming Park. The company accepts the notion of a consultative approach which does not favour a single interest group, and urges the Province to renew its mandate for data collection.

- EIA, p7 - 37: The company favours the addition of a stakeholders advisory committee, reporting to the existing Integrated Resource Management Team.
- EIA, p7 - 63: Recommendations in this section dealt with increasing the level of aboriginal participation within forestry operations. The company emphasized the reduction in AAC within the FML, and its proactive measures to ensure Native and community participation in Abitibi operations, as well as advice to assist in establishing band-controlled forestry on reserve lands.

Mr. Chown also focussed on a number of issues that deserved special mention as a part of the overall response to mitigation recommendations. First, it was stated that unmanaged buffers were no barrier to disease or fire, and that the FML could not afford any more destructive losses. Second, it was suggested that incentives and sponsorship for wood production on private land off the FML must be developed. Third, the company wished to emphasize the difference in forest management and renewal practices before and after the signing of the forest management licence. Fourth, the customer as a component of management decisions, with cost and competitiveness as factors, was brought forward. Fifth, a notion of balance in the consultation with interest groups was raised. Again, the company sense is that little of the area can be set aside for special interest groups and still maintain overall viability for the operation. Sixth, Mr. Chown stated that the company, if successful in its application, would be first in Canada with an environmental licence, which could be used as a marketing tool to enhance product acceptance.

Mr. Chown, in summary, identified three general areas in which the company felt it could not live with the imposition of certain conditions or restrictions with its licence, relating to timber volume, to operating costs, and to tenure on the FML.

1) Timber volume: The company cannot afford further withdrawals in the land base, nor elimination of the multiple-use concept within Nopiming Park or the unilateral extension of buffers. Any reduction in the black spruce AAC is identified as a distinct disadvantage. Furthermore, the Province must live up to its responsibilities for forest fire suppression.
2) Operating cost: Limitations of the number of allowed stream crossings, and road restrictions which extend beyond economic considerations are considered unpalatable to the company. Similarly, the unilateral imposition of cutting patterns or treatments or requirements for the collection of baseline data are considered as unreasonable additions to company costs and

responsibilities. In terms of the replacement of logging equipment, the company considers that it would be improper to replace the current equipment prior to the date of its economic expiry.

3) Tenure: The company has invested heavily within the FML in terms of forest renewal and reclamation. It is felt that any change in policy in the use of herbicides would exclude a large portion of the FML from economic operation. It is felt that the current Integrated Resource Management Team operates effectively, and that to have another off-site body such as the Stakeholders Partnership within the planning review would impede efficient sequential operations. An alternative suggestion was to add one or two new members to the existing Management Team.

Overall, general issues such as First Nations concerns, gathering of baseline data, and logging in parks are viewed by the company as requiring consultation and negotiation. It is felt that sudden imposition of new requirements in these areas would result in major costs to the company which might affect its long-term tenure.

OTHER PRESENTATIONS

St. Georges, 18 October 1991

MR. DORION TRETHART, UNITED PAPERWORKERS INTERNATIONAL (UPIU), LOCAL 1375

Mr. Dorion Trethart, Vice-President of the UPIU Local 1375, stated his local union's views of the forestry management plan (exhibit 22). The union feels that Abitibi-Price does an excellent job of forest management. Any irrational decisions regarding the forest licence would negatively affect Abitibi's competitive position, and threaten workers, spinoff businesses, and the whole region. Mr. Trethart expressed the opinion that the access provided by new logging roads is a positive opportunity for the people of Manitoba to enjoy the wilderness and for firefighters to better accomplish their role. In closing, the union asked that Abitibi-Price be given a fair deal which would allow them to compete in the current recessionary market, recognizing Abitibi's contribution to the entire province.

CHARLES NORMAN, NORTH EAST SUSTAINABLE DEVELOPMENT ASSOCIATION (NESDA)

Mr. Charles Norman, Vice-President of the North East Sustainable Development Association, said that their organization was founded in 1990 to promote the use of the regional resources in an environmentally sound and economically sustained manner (exhibit 23). The

economic portion of this statement is important because the people of the area depend on these resources for their livelihood; the environmental aspect is featured because the water and forest are the basis of residents' recreation. Mr. Norman stated that the knowledge that a huge, unspoiled wilderness is there is part of the very soul of Canada. In the course of outlining some of the history of the environmental movement, Mr. Norman identified two kinds of environmental groups: those that identify potential problems and agitate for their solution, and those that target industry itself in their opposition efforts. It is recognized that environmental criteria are required to protect the environment in which we live and work. But Mr. Norman urged that little heed be paid to those whose political motive is to destroy industry and with it the communities in which these industries are based.

MR. GEORGE HARBOTTLE, PINEVIEW ECONOMIC DEVELOPMENT GROUP

Mr. George Harbottle spoke on behalf of 30 area businesses of the Pineview Economic Development Group, whose purpose is to stimulate the local economy. Mr. Harbottle reminded the Commission of the financial contribution of the company to the economy, and stressed that additional costs would reduce competitiveness in a very tough marketplace. He expressed a personal concern that urban Manitoba viewed the FML as a playground for urbanites, while ignoring the function which the FML resources play in the livelihood of the region's population. The opinion was expressed that the use of the resources of the FML was proof that sustainable development did exist. Mr. Harbottle urged the Commission to reward the community and industry with an unconditional forest management licence for ten years, not the eight applied for, in recognition and encouragement of the company performance to date.

Mr. Harbottle emphasized that effective and responsive forest fire protection was very important. He suggested that priorities were required in decision-making (5 canoeists do not compare with 500 jobs), and that the licence must be flexible in the decision-making of the joint partners (government and industry). The cost-effectiveness of the environmental review and public hearings was questioned. Mr. Harbottle also suggested that government control and regulation create an atmosphere of confrontation in which everything suffers.

PETER MILLER, TIME TO RESPECT EARTH'S ECOSYSTEMS (TREE)

Dr. Peter Miller, Vice-President of TREE, spoke at St. Georges representing this coalition of 14 environmental groups with a concern for Manitoba's forests (exhibit 24). The presentation dealt primarily with policy rather than the specifics of the Plan. In general terms, TREE advocates protection and preservation of the health and multiple values of natural forest ecosystems through a

sustainable forest policy which encompasses both wild and harvested forests. Comprehensive environmental assessments of all facets of the forest industry are seen as a means of guiding forest allocation and management. The processes of environmental assessment and forest management are seen to require an adequate knowledge base and multifaceted valuing of forest systems, and as a prerequisite, sound and comprehensive forest and wildlife policies.

Dr. Miller pointed out that this was the first environmental assessment of forestry operations in Manitoba, and thus provided an opportunity to assess the assessment process itself in this regard, and the background of forest policy and forest data which inform it. It was suggested that the Commission might comment in its report on some of the gaps in the environmental assessment and make recommendations with regard to them. It was pointed out that the assessment of the FML fails to combine with it an assessment of the other 62% of the Abitibi timber supply or of the mill. It was suggested that in meeting the requirement of new federal mill effluent standards by 1994, Abitibi might introduce greater capacity for other fibre sources into the mill, and hence alter the wood supply picture on the FML within the eight year period of the Plan.

TREE believes that proper environmental assessment can only take place with a comprehensive forest policy in place. A sustainable forest policy has not yet been created, and the consultants themselves have commented on the difficulty for the company in planning within an ill-defined policy climate. Dr. Miller suggested that the Commission take the full array of forest-related values into account in their eventual recommendations. It was proposed that in "A Wildlife Policy for Canada", which was endorsed by both federal and provincial governments, a new statement of policy existed which could be used to guide evaluations of impacts on natural environments. In it, an expanded scope for wildlife management is put forward in maintaining ecological processes and biodiversity, and in promoting sustainable use and conservation of habitat.

Dr. Miller emphasized several points of the Wildlife Policy for Canada which he saw to be particularly relevant. The first was the policy guideline that the maintenance of viable natural populations of wildlife always takes precedence over their use by people. This, and another regarding the retention of within-species diversity, he saw as applicable to the woodland caribou in Nopiming Park. The second point was that the policy document supports the endangered spaces campaign for adequate and comprehensive protected areas for wildlife. The policy requires that diversity be protected, and that preserved areas be large enough and linked by corridors of suitable habitat. Both of these were seen as directly relevant to the caribou situation.

Given the lack of protection of existing parks, the requirements of the endangered spaces program, and commitments to both Repap and Abitibi-Price within Manitoba, Dr. Miller suggested that the possibility of the overcommitment of Manitoba's forest lands must be faced. Recycling, technological changes allowing the use of other fibre sources, the conversion of marginal farmlands to silviculture, and the acquisition of additional FML lands were among suggestions for meeting these combined needs. It was suggested that the Commission ask for discussion within government of this possible overcommitment and for a broader review of the total supply question in relation to preservation requirements.

Dr. Miller commended Abitibi-Price and the consulting team for their candour and responsiveness within the EIA process, and recommended that this approach be maintained in future. Summary recommendations of TREE were: 1) implementation of the policies described in A Wildlife Policy for Canada, preserving species and ecological diversity, and ensuring adequate area to provide adequate internal diversity; 2) delay of roadbuilding and harvest in critical areas such as woodland caribou habitat and the Manigotagan River area; and 3) a review of the overall wood supply issue from a province-wide perspective.

In response to a question regarding the costs to the company of increased mitigation, Dr. Miller stated that he was not indifferent to the economic situation of the company, but that the whole point of sustainable development was that the jobs won't exist in the long run unless the operation is environmentally sound. Responding to a question regarding the precedence of resource extraction and other values in parks, Dr. Miller suggested that Manitoba was committed to significant preservation of its ecological zones, and some sort of zoning would be required within parks. At the same time, Dr. Miller stated that he saw the necessity of a viable resource base for the mill, but that the minor fraction of Abitibi's wood supply was from the FML.

FLOYD PHILLIPS, TECHNICAL ADVISORY COMMITTEE (TAC)

Floyd Phillips of Manitoba Environment, served as Chair of the TAC for the Abitibi-Price environmental assessment and public review. In his presentation to the Commission (exhibit 25), Mr. Phillips provided a brief summary of the environmental review process, and a summary of the TAC comments respecting the EIA. The overall perspective from the TAC was that the EIA was well done, but that a commitment to the mitigation and monitoring recommendations was required from Abitibi-Price. Fisheries Branch has been satisfied with updates to formerly incorrect stream identification. Concerns of the Fisheries and Wildlife Branches regarding the Happy Lake road have been resolved with new regulations and directives. The TAC believes that the EIA provides

sufficient information on which to base a licensing decision, despite the data gaps identified. It is suggested that Abitibi-Price's focus is on environmentally sound practices, and that negotiation has led consistently to adequate mitigation of impacts. In the opinion of the TAC, the mitigation measures recommended in the EIA will prevent, eliminate, and mitigate negative impacts. The TAC is supportive of the EIA recommendations for stakeholder involvement.

The general feeling of the TAC is that Abitibi has not unreservedly committed to those EIA recommendations for mitigation and monitoring that pertain directly to the company. Mr. Phillips further stated that the TAC cannot commit resources to monitoring programs which the company had identified as government responsibilities. However, Mr. Phillips did not make any comment or assessment as to whether the Province indeed felt that these were within their proper jurisdiction, and not the company's.

Mr. Phillips refused to comment on whether or not the TAC recognized the monitoring recommendations of the EIA as important requirements, or whether these areas were indeed provincial responsibilities.

Abitibi-Price response to other presentations

Mr. Chown presented evidence in reference to Native employment in response to an earlier question posed to Mr. Westdal. In terms of tree planting which takes place under the union collective agreement, 80% of the workers are from Sagkeeng or Little Black River. With a reduction in the annual allowable cut, independent wood producers were forced off the licence, whereas Abitibi chose to maintain the community-based operations. A new initiative was also instituted to review local tenders first in the letting of tree planting contracts.

Commenting on a proposed moratorium on cutting in Nopiming Park, Mr. Chown stated that it would be premature at this time, would skew future guidelines developed for the park, and would seriously affect the viability of the FML operation. In response to a question regarding trading of wood volume off the FML for that within it, Mr. Chown previously had responded that the fibre would be more expensive, and it would also run counter to the union collective agreement. Furthermore, Mr. Chown stated that the AAC for the FML was determined on the basis of total volume, which would be reduced by closure within the park.

With respect to the banning of bridges across the Manigotagan River, Mr. Chown suggested that ongoing dialogue would be less confrontational and more likely to achieve consensus. It would also be viewed by the company as requiring further volume withdrawal from the FML, which it opposes.

Mr. Chown, in responding to the accolades received by the company from various presenters, said that these were a tribute to the working relationship between concerned users and the company. He pointed to the heron rookery which was discovered by the company, and to the reserves around it suggested by the company as examples of Abitibi's flexibility. Mr. Chown said that it would do the whole process a great injustice to suddenly place red lights and barriers in the way, rather than to continue with the admirable communication process that had begun.

Winnipeg, 19 October 1991

JOHN SHEARER, MANITOBA NATURALISTS SOCIETY

John Shearer, Executive Vice-President of the Manitoba Naturalists Society, indicated that he had not been involved in the preparation of the brief (exhibit 27), and might be unable to answer detailed questions regarding its content. He explained that the Manitoba Naturalists Society was incorporated in 1920, and currently represented approximately 2500 members. It was suggested that in order to participate in meaningful review of such projects, that participant assistance funding should be available, as in the federal environmental assessment process. Mr. Shearer commended Abitibi-Price for its receptiveness and apparent commitment to the consultative process in resource decision-making, and recognized the work of the Synthen Resources consulting team in preparation of the EIA.

An overriding concern of the Naturalists Society was the lack of context surrounding the consideration of the Abitibi EIA. It was suggested that the FML operations must be viewed in relation to the overall operations on the east side of Lake Winnipeg, since they may have a cumulative impact which is not recognized in singular evaluations. Another general concern identified was that lack of data inevitably leads to decisions which are deficient. Mr. Shearer stated that it seemed reasonable that where required data do not exist, the proponent collect them. It was also proposed that statements within the EIA such as "kept to a minimum" or "to the greatest degree possible" are vague and inappropriate while specifying measures to mitigate negative impacts.

Regarding the EIA section on the physical environment, the Naturalists presentation recommended that roads not be allowed across peat areas, and that procedures regarding fuel handling and storage be specified, with training provided to third-party operators.

Regarding the EIA section on the forest resource environment, Mr. Shearer suggested that if dependence on natural forests for wood fibre supply can be reduced, company operations could be withdrawn from conflicting areas on the FML. It was further suggested that an ecologist, rather than a biologist, be hired by the company. The concept of the Stakeholders Monitoring Committee was firmly endorsed. It was recommended that operations within the Manitoba Lowlands region be kept to a minimum until some protection of this ecotype has been accomplished. In terms of harvesting, the presentation stipulated that tops and limbs should be removed close to the felling site, and that no logging should be allowed in bogs and fens.

It was recommended that priority be placed on the identification of rare flora, and that surveys take place in this regard prior to road construction. It is the position of the Naturalists Society that no forestry operations take place in any region associated with caribou, or at the least, operations in these areas be delayed until the results of the caribou study are known.

Mr. Shearer stated that forestry operations should be limited to the winter period along canoeing rivers, and that no bridges be permitted across the Manigotagan River. It was proposed that the Province review its total allocation of productive forest lands to ensure a reliable source of wood fibre supply for the Abitibi operation with the objective of removing forestry operations from provincial natural parks. Furthermore, the use of herbicides within Nopiming Park was opposed.

Mr. Shearer closed by conveying the Society's commitment to developing solutions in good faith, recognizing the needs and problems faced by the company. He commended Abitibi for the action already taken on many suggestions for mitigation. Finally, he urged the Province to develop a plan to address the need for comprehensive and exhaustive research.

In response to a question regarding the establishment of woodlots on marginal farmlands, Mr. Shearer stated that some sort of prepayment was proposed towards the future harvest of that resource. He also indicated a recognition of the need for an adequate wood supply to keep the mill going. Responding to a question regarding the potential conflicts between the need for access for firefighting and the need for road closure for wildlife protection, Mr. Shearer said that fire

suppression should not be the final deciding factor. In his opinion, the benefits of removing most of the roads outweigh the benefits of leaving them in place.

In response to questions regarding the economics of withdrawing any further area of the FML from company operations, Mr. Shearer suggested that a long-term and broad picture, particularly with respect to time, was required, and not simply the necessities of short-term economics. To a question regarding the use of pesticides in parks, Mr. Shearer indicated that the primary problem was one of principle: the Society opposed the use of the herbicide in parks as an ecosystem modifier, which promoted the regeneration of certain species at the expense of others.

DR. R. RACHEV

Dr. R. Rachev, a veterinary surgeon, suggested to the Commission that without forests, we cannot have life: that the forests act as the lungs and skin of the earth. Dr. Rachev suggested that population control was required because of the finitude of the resource base upon which we operate. He felt that our life on earth is endangered, and that a singular emphasis on money was detrimental to society and to life processes.

HARVEY WILLIAMS, TREE

Harvey Williams, President of TREE, stated that his organization's purpose was to act as an informed, articulate, responsible, and aggressive advocate for forest values other than those related to the commercial harvest of trees. His presentation (exhibit 29) suggested that non-consumptive users of the FML are valid stakeholders as well as those using it in a consumptive manner. He stated that it was not the wish of his organization to make Abitibi's situation any more difficult than it might already be, and recognized that wood supply was a limiting factor.

Mr. Williams stated that a series of provincial governments have over-committed the forest resources of the province, while following a policy of wanton commercial exploitation without regard to non-commercial forest values. It was suggested that changing economic conditions and public values have overtaken this policy, yet no comprehensive policy has yet to replace it. It was stated that a rational process of planning and preservation cannot take place in the absence of a comprehensive, long range, province-wide forest management plan.

Mr. Williams went on to say that the EIA fails to meet specific guidelines of the scoping document, particularly regarding sustainability.

Specific recommendations to protect biodiversity were made in the presentation. The Northern Coniferous Forest and Manitoba Lowlands forest types are recommended for representative preservation. The practice of utilizing seed from "superior" trees is opposed in that it reduces the phenotypes represented in planted stock.

It was suggested that park values in Nopiming will suffer due to the elimination of old growth forest, salvage cutting along rivers, and intensive silviculture. It was stated that park policy should require that all logged areas in parks be allowed to regenerate naturally. Selective cutting in buffer zones was considered to be an oxymoron. It was further stated that logging in provincial parks should be phased out in the least painful way possible.

Mr. Williams concluded by congratulating Synthen Resources for the quality of their report, and Abitibi-Price for their constructive responses.

Responding to a question regarding the relative hazards presented by buffers damaged by insects or disease and by selective cutting within the buffers, Mr. Williams stated that parks are a place where nature should be allowed to take its course. But when asked whether all logged areas should be left to regenerate naturally, Mr. Williams responded negatively, stating that he liked the three-forest concept. Mr. Williams suggested that it was irrelevant whether logging had taken place in the area prior to park designation, that park values should predominate in parks. Regarding cottages in parks, Mr. Williams expressed the opinion that they were incompatible with park purposes.

ROGER TURENNE, CANADIAN PARKS AND WILDERNESS SOCIETY (CPAWS)

Mr. Roger Turenne, President of the Manitoba Chapter of CPAWS, said that given its mandate of the preservation of parks, the CPAWS presentation (exhibit 31) would concentrate mainly on the impact of the current proposals with respect to Nopiming Provincial Park. Mr. Turenne commented on the lack of intervenor funding as hampering the response of participants in the public review process. It was also his position that the federal government had abdicated its responsibilities in avoiding separate or joint hearings. Mr. Turenne chose to applaud the cooperative attitude of Abitibi-Price and Synthen Resources. He stated that the company had gone out of its way to meet with CPAWS and other groups, and had been very forthcoming with information.

The primary concern of CPAWS with regard to the proposed Forest Management Plan is that, in Mr. Turenne's opinion, it constitutes the most serious threat to the integrity of Nopiming Park since establishment in 1976. It is his view that consideration for wood supply needs, rather than preservation of the boreal forest, dominated in the establishment of the park boundaries. According to the Park Purposes section of the interim management guidelines for Nopiming Park, the maintenance of a natural setting for recreational opportunities should take precedence over resource harvesting activities.

Mr. Turenne responded to the notion that park timber must be available to make up for losses caused by fires elsewhere on the FML. Mr. Turenne stated that the park itself was affected more severely by fire than the rest of the FML. He suggested that this was a lose/lose situation for the park: if it burns within the park, timber is lost in the park; if it burns outside the park, timber is lost in the park.

Given that Manitoba has not yet identified the areas it intends to preserve in fulfillment of its commitment to the Endangered Spaces Campaign, given that a management plan has not been completed for Nopiming Park, and given that caribou are endangered at these latitudes in Manitoba, irreversible decisions should not be made prior to availability of all the facts.

Mr. Turenne recommended that the Nopiming Park boundaries be extended to include the Manigotagan River to PTH 304, having the same status as the Bloodvein extension to Atikaki Park. There would be a 250 m corridor on each side of the river, and no bridges over this section of the Manigotagan River. The preferred recommendation he would choose would be to ban logging in Nopiming Park. However, Mr. Turenne stated that a more reasonable and compromise suggestion would be to impose a complete but temporary moratorium on logging in the park until the caribou studies are complete and understood and until a management plan has been completed for the park. The third, and least preferred option recommended by CPAWS to the Commission would be for more severe mitigation measures within the park compared to the rest of the FML. When questioned as to the nature of these measures, Mr. Turenne suggested that there should be larger buffers, and no intensive silviculture.

In response to a question concerning conflicts between recreation and wildlife, Mr. Turrene said that in terms of a hierarchy of values, there is no doubt that wildlife habitat comes first. However, in provincial parks he predicted that this would not be the most frequent trade-off.

Responding to a question concerning the economic value of tourism within Nopiming Park, Mr. Turenne stated that he did not have figures available. However, he did say that academic studies in other areas had shown that non-consumptive uses often have equal or superior economic benefits to the consumptive uses of natural resources.

With respect to questioning regarding the impact of the park highway and of cottages upon caribou populations, Mr. Turenne said that he did not know their effect, but that the general lack of information regarding the influences on caribou was a particular problem. In response to a question regarding the economic hardships of removing part of the projected 38% of the wood supply by closure within the park, Mr. Turenne stated that it was a matter of taking the company's word, since no specific economic evidence had been presented. Mr. Turenne further said that he had no reason to consider that this information would have been withheld if requested from the company.

When asked about the suitability of portions of Nopiming Park for the Endangered Spaces Campaign, Mr. Turenne suggested that the northeast corner of the park, since it was contiguous with Ontario's Caribou Wilderness Park, was particularly attractive in this regard.

WILLIAM KOCAY, MANITOBA RECREATIONAL CANOEING ASSOCIATION (MRCA)

Mr. Hendrik Herfst read the brief into evidence on behalf of Mr. William Kocay, Chairperson of the Manitoba Recreational Canoeing Association Lobby Committee. The report to the Commission focuses on the Manigotagan River, though it is only one of several streams affected by the proposed forestry operations. The MRCA considers this river unique in terms of its accessibility, its suitability for intermediate whitewater paddling, and in the beauty of its waterfalls, forest, and wildlife.

Mr. Herfst stated that bridges proposed in the Plan are undesirable because of the destruction of wilderness caused by increased access, entrapment of debris, and the unpleasing aesthetics within the context of a wilderness canoe trip. He questioned whether temporary bridges would indeed be removed in the future, given an altered economic climate. It was also questioned whether road barricades provide more than a hindrance to all-terrain vehicles.

It was proposed that the effects of canoeing on the FML are very real in their impact on people, and should be taken into consideration in the planning of forest operations. Mr. Herfst said that when viewed as an essential bond between humans and other living things, and not as a commodity, natural environments have no substitute. It was said that the MRCA believes that

wilderness canoe routes and forestry operations can co-exist given adequate planning, cooperation, and consideration of a full range of resource values within the FML.

Specifically, it was recommended that no bridges be built over the Manigotagan River, and that a Wilderness area of Nopiming Park be created along the river. Where bridges are constructed, it is recommended that clear span bridges be built with no river obstructions, and that temporary bridges should have a binding requirement for removal within a fixed period. It is proposed that any bridges built at rapids be at the top of rapids. Removal of the logging road to Cascade Rapids and Old Woman Falls is proposed. A portage between Garner and Gem Lakes, which lies within a contingency zone, should have a buffer around it. Alternatives were proposed for the contingency area near Turtle Rapids to avoid the necessity of a bridge.

Finally, Mr. Herfst commended Abitibi-Price for its concern for wildlife and the environment, and for its friendly and cooperative handling of issues relating to canoeists. For example, Mr. Herfst mentioned a proposed bridge over the Bird River which had been cancelled and replaced by a winter road in response to the concerns of canoeists.

Responding to a question regarding the Gem Lake bridge, Mr. Kocay stated that the preference would be for no bridge in that location. Where this was not an alternative, the placement of the bridge above the rapid would be acceptable.

HENDRIK HERFST

Mr. Hendrik Herfst presented the Commission with a personal written brief (exhibit 34), and with a slide presentation advocating the expansion of the methodology of environmental assessment to include such values as beauty and spiritual renewal. It was Mr. Herfst's premise that another body of knowledge alongside the scientific has been developed by philosophers, poets, naturalists, and psychologists, and that it should be used in the current assessment process. He suggested that other qualities of the river are important: a sense of place, inspiring beauty, and deeper meaning encountered while travelling rivers in wilderness fashion. Mr. Herfst stated that reliance on technological and economic reductionism in EIA prepares one to inflict damage in the name of 'progress.' He suggested that his method of presentation was an attempt to bring the values of beauty and environmental experience into the impact assessment process.

DR. ALLAN LANSDOWN, MANITOBA ENVIRONMENTAL COUNCIL (MEC)

Dr. Allan Lansdown, Chairman of the Manitoba Environmental Council, initiated this brief (exhibit 35) by commending both Abitibi-Price and Synthen Resources for their cooperation and provision of information. Mr. Nick Carter, Vice Chairman Technical of the MEC, began the brief by suggesting that the Commission need not confine its recommendations to the limits of the FML, but could go on to make recommendations pertaining to forestry in Manitoba in a broad way.

The MEC is skeptical regarding the claim that activities proposed under the Plan would likely, on balance, result in overall reduction in atmospheric carbon dioxide concentrations and an increase in the carbon reservoir of the FML. According to research that the MEC has reviewed, some would consider that a prime value, or even 'best use', of the boreal forest may be as a carbon sink. It is proposed that forest cutting operations in this forest might be confined to servicing regional and largely domestic needs.

Mr. Carter stated that the mill in Pine Falls should be reinforced as a focus for the production of recycled paper in Manitoba, expanding its capacity to include de-inked and other fibres. This would result in the conservation of forest resources and the preservation of wildlife habitat and other forest values. It was stated that it may be likely that government intervention and support may be required to ensure initial viability. The MEC considers that any shift within the pulp and paper industry which reduces cutting, encourages forest diversity, and increases the chances of preserving ecological systems is highly desirable.

Mr. Carter stated that the quality of the EIA is severely constrained by the lack of information regarding the environment in which the forestry operations take place. In spite of commitments to sustainable development, it is the MEC's view that the systematic accumulation of knowledge regarding the forest has been hampered by government cutbacks in research projects. It is the view of the MEC that a plan for the preservation of diversity on the FML is a prerequisite to the approval of the eight year licence.

Mr. Carter stated that if Manitoba's commitment to the Endangered Spaces Program is to be realized, logging within parks must be disallowed.

Specifically, the MEC recommended that in the longer term, the greatest benefits to Manitobans in managing the FML lie in the phasing out of commercial forestry within it. Meanwhile, the intermediate step of maximizing the use of recycled fibre should be investigated.

The MEC suggests that the Commission may wish to recommend studies of the role played by wood suppliers beyond the limits of the FML. It is recommended that the Commission suggest to government the necessity of a funded, long-term research program to address the deficiencies in environmental knowledge. The MEC considers that the time has come to face the issue of logging in parks squarely, and that the implications for Nopiming be considered. The MEC suggests that the stakeholders committee should include residents directly affected by the company's operations and others who have a broad interest in Manitoba's forests. Finally, the MEC proposes that a mitigation plan, assembling the recommendations of the EIA, should be prepared ahead of issuance of the licence, with performance as a licence condition.

When questioned on the nature of the report by the Commission that the MEC envisioned, Mr. Carter stated that a two-part decision by the Commission was imagined: one which would apply to Abitibi and the FML *per se*, and one which would would deal with overall forestry issues in Manitoba.

Winnipeg, 16 November 1991

STATEMENT OF COUNSEL FOR ABITIBI-PRICE

Mr. William Ryall of Fillmore & Riley, in his position as counsel to Abitibi-Price Inc., raised an objection to the reconvening of hearings on the grounds that there appeared to be a broadening of the scope of the hearings beyond the initial mandate of the Commission. The objection was two-fold. First, Mr. Ryall stated that any enquiry into areas beyond the Abitibi FML (for example, into the Repap FML) was, in his respectful submission, an error in law by the Commission. Second, whereas determination of government policy was identified by Mr. Ryall as within the jurisdiction of the Commission, any evaluation of policy by the Commission would be considered by Abitibi-Price as being beyond the scope of the hearings. Having read the correspondence from the Commission to the Department of Natural Resources (exhibit 42), Mr. Ryall was concerned with the apparent direction of the hearings, and wished that his objections be placed on the record. It was his further submission that Abitibi-Price should have been consulted in respect of the issues to be determined at the additional day of hearings. Mr. Ryall also took exception to the Commission permitting the acceptance of evidence from Sagkeeng First Nation.

JERRY FONTAINE, SAGKEENG FIRST NATION

Jerry Fontaine, Chief of the Sagkeeng First Nation, presented a brief (exhibit 46) on behalf of the Ojibway people of Sagkeeng, whom he considered to have been considerably affected by the operations of Abitibi-Price. Sagkeeng is in the process of developing its own forest management plan for reserve lands and to address an apparent need for reforestation of its area of traditional use. It was said that Abitibi's forestry operations have left the area decimated, with little attempt at reforestation. It is the perspective of Sagkeeng First Nation that they ought to be involved in any discussions regarding this natural resource.

Chief Fontaine quoted from the Aboriginal Justice Inquiry a section which suggested that the provincial government pursue the development of co-management agreements with First Nations peoples regarding off-reserve timber resources located within traditional territory. The Aboriginal Justice Inquiry also proposed that a moratorium be placed on all development projects until agreements are made with aboriginal groups. and that a policy be developed respecting the desire of aboriginal people to retain a role in the management and conservation of their traditional territory.

A summary of specific recommendations made by Sagkeeng included:

- That the Eight Year Plan be held in abeyance until the recommendations of the Aboriginal Justice Inquiry be considered, with one-year licences being issued in the interim.
- That Sagkeeng's proposal for a Forest Management Plan (1991-1996) be accepted and funded.
- That a joint management board be established between the Province and Sagkeeng First Nation for conservation, protection, and rehabilitation of the forestry resource; infrastructure development; improvement of harvesting techniques; and for the protection of wildlife.

Chief Fontaine finished his presentation by saying that the people of Sagkeeng have stood by too long while their traditional areas were devastated, and that it tears the soul out of the Anishinabe to see the forest raped and devastated. He said that though they had been told of the occasional benefits from Abitibi's operations, they hadn't benefitted overall; fishing on the Winnipeg River, trapping, and traditional hunting had been all but been destroyed. Chief Fontaine considered it extremely important that the Province, Sagkeeng, and Abitibi discuss the uses of the forest resource, and that a co-management board would give the Anishinabe a proper role in the process.

Mr. George Munroe, economic development consultant to Sagkeeng First Nation, presented some details of the proposed Sagkeeng Forest Management Plan for reserve lands. He stated that a tree nursery and tree planting are the major aspects of the renewal plan, but that the plan was still at an undeveloped stage. Forest activity is being considered within the reserve lands where a forest inventory had been recently completed, and within the boundaries of the FML. In response to a question, Mr. Munroe stated that a sawmill within the community was being considered, to produce construction lumber and materials for furniture manufacturing utilizing woods such as oak, birch, and aspen. Initial discussions with Abitibi seemed to indicate no difficulty in obtaining these species within the FML.

In response to a question, Chief Fontaine stated that Sagkeeng was involved in discussions regarding the buyout of the Pine Falls operation, and was not opposed to forestry operations, as such. However, he went on to say that stringent controls had to be in place regarding cutting and the environmental aspects of forestry, and that significant outstanding issues remained to be resolved.

In response to a question, Chief Fontaine said that there were at least two locations of significant spiritual value to the Anishinabe that could be identified, and that a map containing these references would be supplied to the Commission. Chief Fontaine's response to a question regarding outstanding land claims was that the whole FML may be a part of the land claim that had been filed. He also said that there seemed to be few moose left in the area, as Sagkeeng hunters have had to go elsewhere for moose.

To a question concerning the makeup of a stakeholder's committee, Chief Fontaine felt that a co-management agreement could involve Sagkeeng and other aboriginal communities, Abitibi, the Province, and other stakeholders such as TREE or the Naturalists Society.

COMMISSION QUESTIONS TO NATURAL RESOURCES PERSONNEL

In a letter to the Deputy Minister of Natural Resources (exhibit 42), the Commission stated that information deficiencies experienced in the hearings regarding Abitibi-Price's Eight Year Forest Management Plan were, to a large degree, related to the practices and policy of the Department of Natural Resources. The letter identified some of the areas requiring further clarification, which will be used to organize the responses to questions which follow, and which took up most of this day's session. Intervenors were allowed questions, as well, after the Commissioners had completed a particular segment of their agenda for questioning.

• **Annual allowable cut and enforcement of Forest Licence provisions**

Mr. Dave Rannard, Director of Forestry Branch, outlined the procedure by which the annual allowable cut was determined. Forest inventories are the basis from which AAC are calculated. The AAC is determined by the amount of timber in the mature and overmature cutting classes within established forest management units. Forest management unit 30 is entirely within the FML, as well as parts of units 31 and 35.

He stated that the AAC can be interfered with by a number of influences, including insects, disease, major fires, or reductions to the land base for uses such as a hydro utility corridor. When a major catastrophe occurs, such as the 1989 fires, the AAC is immediately recalculated; the AAC was reduced at that time by some 30%. Otherwise the forest inventory for the FML is maintained on a 10-year basis. The determination of a company's AAC also takes into account the type of product being produced, and hence the age and species of the trees required. The figure utilized for rotation period within the AAC calculation is determined by the type of product desired: whether pulpwood or telephone poles, for example. In terms of using rotation periods and the AAC to address issues such as the promotion of a more diverse forest structure, Mr. Rannard felt that these questions should be addressed at the time of a comprehensive evaluation of forest policy or forest strategy.

A question was asked regarding the nature of the government response to a forest company request for rights to additional area, in a case where AAC had been reduced. Mr. Rannard said that the addition of further area to the licence would be a possibility to be considered. In the context of another question regarding withdrawal of forest lands, Mr. Rannard said that government would have to compensate the forest industry for withdrawals for parks, for example.

In terms of the determination of AAC within Nopiming Provincial Park, Mr. Rannard said that the AAC is determined, as usual, within a particular forest management unit. AAC within the park is then further divided into open and restricted zones. The open zone is treated, from a Forestry Branch perspective, similar to the rest of the licence.

Mr. Bruce Bremner, Parks Branch, replied to a question concerning the differentiation of activity within the zoned areas in Nopiming Park. The restricted zone, from a Parks perspective, is viewed as being a part of the AAC calculations, and is available for cutting. Restricted zones within Nopiming Park are limited largely to river corridors and another corridor along the highway.

River buffers are 100 m minimum, with site-specific cases of skyline buffers extending to 180 or 250 m.

Mr. Rannard was asked whether the calculation of the AAC integrated considerations for the viability of the forest ecosystem. In response, he stated that the calculation of AAC supported traditional forestry concepts of sustained yield, and that it does not consider other aspects of the forest system. The forest as an integrated ecosystem or as a place of spiritual renewal with intrinsic value does not figure in the calculation of the AAC. Mr. Rannard went on to say, however, that once the AAC had been calculated as a maximum in an area, the AAC could be adjusted to account for other concerns. Removal of an area for caribou habitat, for example, would reduce the overall AAC due to the reduction of area. The AAC in and of itself does not consider other forest values.

In terms of over- or under-cutting of the AAC within an area, a company would be allowed to balance these two over a 10-year period up to, but not over, the total volume of the AAC. Once the AAC had been reached for the 10-year period, harvesting would cease.

- **Provincial forest policy**

Mr. Rannard began by stating that there are three legal instruments through which policy under the Forest Act and Forest Regulations (exhibit 49) is applied: permit, for small volumes; timber sale, which is more formal and rigorous, and normally stands for 5 years; and forest management licence, under which Abitibi operates. Allocation to date has occurred on the basis of historical harvesting activity. Where the full annual allowable cut has been allocated in one area, no further activity would be allowed at that location.

Besides the Forest Act and Regulations, a Forest Strategy is being developed under the overall sustainable development strategy. A recent document in this process, "What You Told Us: Forests" (exhibit 47), contains eight basic policies for sustainable forest management in Manitoba. There is also a prescription for forest management in the provincial 20-Year Forest Management Plan, which is dated 1981. An update of this plan is scheduled, which should incorporate the interests of other stakeholders in the forest, such as aboriginal groups, and will draw strongly on the "What You Told Us" document for its focus on contemporary forest issues.

Mr. Rannard was asked whether we have sustainability in our forests in Manitoba at the present time. In response, he answered that he firmly believed from a commercial forestry point of

view, that our forests are sustainable. However, he qualified this by stating that management of the forest would have to have gone on for at least one or two full rotation periods of 80 years each to know exactly what was taking place in the forest.

- **Forestry access roads**

Mr. Kip Tyler, Chairman of the Integrated Resource Management Team, Eastern Region, stated that decisions regarding roads have often been made on the basis of previously established usage. Other considerations may come into play such as whether the road may be detrimental to the wildlife resource, or whether a particular road should be closed for safety reasons because of degeneration of the road base. The situation of the Happy Lake road closure is relatively new, where consultation took place with the company and other resource users to clarify the reasons for road closure.

Mr. Stan Kaczanowski, Regional Forester, explained that Abitibi had also made suggestions of their own regarding roadbuilding in sensitive areas. These would include winter, rather than summer operations, and winter roads, which are impermanent.

- **Impacts of forestry in FML 01 on woodland caribou**

Mr. Dick Robertson, Wildlife Branch, responded that the caribou study should be completed in March of 1992. He stated that whether cutting should take place or not depends upon the degree of risk to be taken. The study will not be definitive in terms of the relationship of caribou to forest extraction, but will establish the pattern of seasonal habitat use of the caribou, and provide a set of guidelines for forest extraction.

Mr. Robertson said that to date, it has been learned that caribou do not extensively use cutover areas. It has not yet been determined to what extent caribou are driven away from such areas.

The concept of corridors was utilized in an evaluation of the EIA with respect to caribou habitat.

Mr. Robertson said that the particular herd has declined to about 50 animals from about 150 in the 1950's, and that this decline seemed to be from disease and some slight hunting pressure. The

Wildlife Branch considers the herd to be incapable of surviving much more stress. None of the rutting areas of the Owl Lake herd have yet been identified, and all of their calving areas are not yet known.

Mr. Jim Potton, Chairman of the Resource Integration Branch, said that the Department, in dealing with the Happy Lake decision and the caribou study, took an approach to the Eight Year Management Plan that would be on the conservative side, recognizing that all information was not in regarding caribou. Mr. Robertson added that where new information regarding caribou habitat requirements does arise, control can be exercised through the annual cutting plans.

A related question concerning he application of the Wildlife Guidelines for Canada within the Department of Natural Resources, nd specifically, within a Forestry Branch appraisal of FML activity, was raised. Mr. Potton stated that each provincial jurisdiction would incorporate these suggested policies in its own manner, and that this would be brought forward in endangered species legislation and in the sustainable development policy. Mr. Vince Crichton, Wildlife Branch, said that the Wildlife Guidelines had been widely circulated within the Branch.

- **Environmental background data**

In terms of fisheries management, Mr. Dave Fitzjohn, Regional Fisheries Branch, said that the types of baseline data available are quite rudimentary. He stated that information about particular species, though often not detailed, may be adequate to make recommendations about restrictions which might be necessary in forestry operations.

Mr. Fitzjohn said that buffer guidelines are very effective, with no significant detrimental effects to the fisheries resource. He also said that stream-crossing guidelines seem effective in preventing erosion. He did say that forestry activity does have impacts on the flow regimes of streams within the FML, with higher total flows and higher spring flows. He went on to say that this does have effects on fish populations, but that it would be difficult to ascertain the type and extent of impacts. The Fisheries Branch does not have the capability of completing such studies at the current time.

In summation, Mr. Fitzjohn said that the fish resource is relatively well safeguarded from the kinds of forestry operations that are occurring as long as the stream-crossing and buffer guidelines are rigorously applied.

Mr. Joe O'Connor, Fisheries Branch, answered a question regarding the division of responsibility between federal and provincial Fisheries units. He stated that the Province is responsible for the management of populations, the control of users, and the application of guidelines, which are developed in consultation with the federal Department of Fisheries and Oceans. Federal Fisheries has responsibility for the management of fish habitat.

- **Stakeholder participation in resource management decisions**

Mr. Potton said that the Department had no firm feelings on a particular model or approach that would be best suited to provide stakeholder input, though they are eager to ensure that it does in fact occur. He suggested that it would be cumbersome to attempt to broaden the Integrated Resource Management Team to include all the stakeholder groups, and that an additional mechanism would be required.

Mr. Gordon Prouse, Director of Parks Branch, said that in terms of public participation, the interim management guidelines by which Nopiming Park is operated do not provide the same access for public input as does a formal management plan. Mr. Prouse went on to say that through the process of the natural land strategy in the sustainable development initiative, a re-writing of the Parklands Act would likely occur which would involve extensive public consultation.

- **Forest regeneration**

Mr. Rannard began the response by stating that the renewal prescriptions within the Eight Year Plan were reviewed by the Forestry Branch as to their general appropriateness. At the time of the review of annual plans, more detailed proposals are evaluated at the branch and regional levels. Mr. Kaczanowski added that review through the Integrated Resource Management Team considered various concerns of stakeholders and the goals of the various member branches.

Mr. Potton suggested that it was at the level of the annual plan that stakeholder groups would find the greatest and most appropriate opportunity for input.

- **Non-company operations within the FML**

Mr. Rannard said that under the terms of the company agreement, the company has forest management responsibilities, including supervision of third-party operators. Supervision is a shared responsibility with the Department, with enforcement the sole role of the Department.

To a question regarding the monitoring of forestry activity under the terms of the FML, Mr. Rannard reiterated the dual role of the company and the Province. Mr. Kaczanowski added that monitoring begins at the planning stage, through site-specific assessment of the annual plans. He also said that, due to the long-term character of Abitibi's involvement, self-regulation is in the company's best interest. Mr. Potton added that any agency of government could use additional resources. But he went on to say that the involvement of other stakeholders in the EIA process allowed informed participation in the monitoring process.

- **Timber harvesting in parks**

Mr. Prouse said that the 20-Year Forest Management Plan is long-term and unspecific, by its nature. He stated that where the Parks Branch really influence decisions regarding harvesting in parks is in the review of the annual cutting plan done by the Integrated Resource Management Team.

Mr. Prouse stated that from a Parks perspective, Nopiming Park was a special place, and a park first before it is anything else. This approach is maintained while reviewing any plans for commercial utilization. Mr. Prouse went on to quote a parks policy which stated that parklands will accommodate commercial utilization of resources where it does not lessen future recreational use potential, or unduly compromise the primary purpose of the park.

Ms. Kelly Leavesley, Regional Office of Parks Branch, stated that management occurs on a case-by-case basis, within and without Nopiming Park, through the vehicle of the Integrated Resource Management Team. Within park areas, park values are put in stronger focus in evaluation of plans. But park or recreation values are also applied outside of parks, such as is the case with recreational canoe routes. On-site inspections may be used, as in the application of buffers, to ensure the preservation of park values. Ms. Leavesley said that Parks Branch has an interest in the values of river corridors outside the Park. She agreed that the values of the Manigotagan River might well be better preserved within a park rather than if the area remained outside of the current boundaries. In response to a later question, Ms. Leavesley suggested that the creation of a wilderness zone along the Manigotagan River would likely have to be left to a later review of the interim management guidelines of Nopiming Park.

Mr. Helios Hernandez, Parks Branch, responding to a question regarding silvicultural practices in parks, stated that practices were carefully evaluated in the Integrated Resource

Management Team review of the annual plans. Herbicide use is not prohibited, although aerial application of pesticides is viewed as inappropriate. Natural regeneration is relied upon as much as possible, but regeneration decisions are made upon a site-by-site analysis. Mr. Kaczanowski added that trenching as a form of site preparation would be avoided in high recreation areas. However, where natural regeneration fails, other techniques would be considered.

To another question regarding the appropriateness of the use of parklands for the production of trees by unnatural silvicultural methods, Mr. Prouse said that the initial view of Parks was that natural regeneration is the method of choice. Parks Branch also seeks to avoid even-aged forests as a result of regeneration practices.

- **General forestry management practices**

To a question regarding the choice of an appropriate buffer width, Mr. Rannard stated that these decisions were made at the regional level. Mr. Kaczanowski added that standard procedures existed for recommending buffer width, but that particularly where sensitive sites were involved, on-site inspection was employed. The Integrated Resource Management Team has used skyline buffering determined by snowmobile inspection along portions of the Manigotagan River. Mr. Potton later said that the buffer regulations are interpreted somewhat differently on application by the different branches as they seek to protect different forest values.

To a question regarding the size of clearcuts, Mr. Rannard answered that the maximum size was 100 ha. However, he stated that most areas of Manitoba do not lend themselves to clearcuts, by the patchy nature (age, size, and species) of forest stands. In terms of separation of clearcuts between successive cuts, Mr. Kaczanowski stated that the hardwood species in a cutover must reach a minimum size of 3 m in order to consider adjacent cutting. Overall cutover areas may also exceed 100 ha where disease, insects, or windfall are involved.

Mr. Rannard stated that the Department has addressed the concerns respecting fire control on the FML that the company has raised over the last couple of years. A fire priority map exists from a forestry point of view, with the identification of key forestry areas. In an actual fire situation, protection of life and property, recreational values, and forestry concerns are the order of priority.

- **Co-management between the Province and First Nations**

Mr. Potton said that throughout the province, there was an increasing interest in co-management agreements with First Nations communities. Mr. Fitzjohn mentioned the current attempt to negotiate a co-management agreement with Sagkeeng First Nation concerning lake sturgeon on the Winnipeg River. It is not a comprehensive agreement, and deals only with this particular threatened stock. Mr. Potton mentioned other agreements, such as those with the Waterhen and Mathias Colomb bands. He said that there was not currently an existing co-management agreement in the province concerning forestry.

CLOSURE OF EVIDENCE

The Chair declared the evidence closed.

FINAL SUMMATION FOR ABITIBI-PRICE

Mr. Ryall presented the Commission with the final submission on behalf of Abitibi-Price. Mr. Ryall reviewed the relevant law and the history of the Wood Supply Agreement and the proposal before the Commission, noting that Abitibi has operated in the area for more than 60 years.

Within a review of aspects of the proposed Eight Year Management Plan, Mr. Ryall stated that annual plans are subject to review. This results in the issuance of permits with defined restrictions. In all aspects of forestry management, consultation with the Integrated Resource Management Team takes place.

Mr. Ryall, on behalf of Abitibi, presented a proposal with respect to the structure and function of a stakeholders' advisory committee. The body would be established as an advisory committee, with a developed mission statement. Membership would include the local government, membership from Natural Resources, intervenors such as TREE and the Naturalists Society, the local union, and First Nations groups, should they so choose. Funding would be from the company. Minutes and recommendations from monthly meetings would proceed to the Integrated Resource Management Team. Abitibi-Price cannot accept the concept of another approval body, as opposed to one reporting to the Integrated Team.

Mr. Ryall stated that to impose restrictions which eliminate the competitive advantage of FML #01 essentially eliminates Abitibi at Pine Falls together with the communities' economic base.

The final summation included a breakdown of the proposed mitigation and monitoring that resulted from the EIA. Abitibi agreed to accept 73% of the recommendations as proposed by Synthen Resources, and suggested that 23% were in the jurisdiction of the federal or provincial governments. Mr. Ryall went on to list alternate recommendations which had been made by Abitibi for the additional 4% of the EIA mitigation.

Mr. Ryall went on to reiterate Mr. Chown's previous statement of the position of Abitibi-Price which had been given in his rebuttal testimony. In summary (and to repeat that which has been already summarized under the heading 'Abitibi-Price response to mitigation and monitoring recommendations'), the company has indicated its concerns with conditions which would negatively affect wood volume, the cost of its operation, and its tenure in this location.

In summary, the most important concern to Abitibi is the potential reduction in volume from the FML, which is deemed critical. Mr. Ryall stated that there can be no reduction in Abitibi's annual allowable cut in the FML. He continued that all forest management goals and objectives since 1979 have been aimed at improving the productivity of the resource base, and increasing the AAC.

Mr. Ryall said that Abitibi has developed sound forest management techniques and has cooperated fully in all aspects of data collection, consultation, negotiation, stakeholder information, and compliance with all federal and provincial policy. He stated that this commitment expressed in the evidence requires the same sense of fairness and cooperation from all parties in the process, including the Commission. Abitibi seeks from the Commission that the proposal be recommended in accordance with Abitibi's submission.

DISCUSSION

Introduction

Forestry activity has gone on in the FML 01 region for more than 60 years. It forms a significant portion of the local and regional economies, and remains an important industry in Manitoba.

Abitibi-Price has had a longstanding presence in the area. With the shift from Timber Berth to Forest Management Licence in 1979, the company and the Province entered a new phase of cooperative forestry management. Since the signing of the FML 01 Agreement, the company has successfully designed and concluded two Five Year Plans for its forestry operations in the FML area. In so doing, it has extended the twenty-year Agreement until 31 December 2008.

The Environment Act of 31 March 1988 stated that certain projects would be required to go to public hearings conducted by the Clean Environment Commission. This review by the Commission of Abitibi-Price's Eight Year Forest Management Plan marks a first in Manitoba, where public review of proposed woodlands forestry operations has become a precondition of licence renewal.

The company has been open in its response to these requirements. Considerable consultation has gone on in the development of operating plans, the Eight Year Plan, and the EIA. As well, as a requirement, the company regularly meets with members of the Integrated Resource Management Team in the evaluation of ongoing forestry operations, including decisions regarding cutting, road access, stream crossings, and wildlife considerations.

The company has also dealt openly with stakeholder groups, and encouraged the transfer of information. The public hearings were marked, on the whole, by the general cordial tone between the proponent and various intervenors. There was a general consensus among presenters: respect for the way in which the company has dealt with the public review process, stakeholders, and issues of environmental concern within their forestry operations.

The Commission found itself required to make decisions on specific operating issues which dealt with the leading edge of forestry policy across the country. Provincial and federal

governments are in the process of dealing with broader forestry issues in the context of sustainable development, but have yet to report on these initiatives.

The Commission also found itself required to make recommendations now, prior to the presence of established forest policy consistent with the principles of sustainable development. The issues found in the recommendations below dominated discussions within the public hearings and within the deliberations of the Commission. In making its recommendations, the Commission sought to consider both the environmental and economic elements of each issue.

Logging in Nopiming Park

When Nopiming Provincial Park was established in 1975, its area was overlaid on top of portions of the Abitibi Timber Berth which was under active logging at the time. Logging has continued annually as an activity which has been allowed in some areas of the park. With the establishment of FML 01 in 1979, zones which were open, restricted, and closed to logging were created in Nopiming Park. Interim Management Guidelines for Nopiming were originally issued in 1982, and revised in 1984 and 1988. The guidelines stated that present commitments to forestry operations are acknowledged and will be maintained.

Atikaki Wilderness Park was subsequently partially overlaid on the FML and the Integrated Wood Supply Area. The FML area was reduced 68,939 ha. (8%), with consequent reduction in annual allowable cut of 36,610 m^3/year. Replacement volume for these inventory losses has been negotiated between the company and the Province.

Manitoba is one of the few remaining jurisdictions in Canada to permit commercial logging in provincial parks. The policy of multiple-use in provincial parks has allowed this to be the case, except in designated closed or wilderness areas within parks, or in wilderness parks.

In 1987, the report of the World Commission on Environment and Development (the Bruntland Commission) enlarged upon the concept of sustainable development. Broadly stated, the concept promotes development of resources and the environment today which does not damage prospects for their use by future generations. Within this broad set of principles is the notion that a portion of the earth's land area needs to be managed explicitly for the purpose of conserving species

and ecosystems. Concerns for conservation include a recognition for the necessity of protecting biodiversity.

Whereas nearly four percent of the earth's land area is currently protected, the World Commission recommended that the total expanse of protected areas needs to be at least tripled. The report of the World Commission also recommended that governments review programs in areas such as agriculture and forestry which can degrade and destroy species' habitats.

It is from such a background that the Endangered Spaces Campaign has emerged, with its goal of establishing areas totalling 12% of national and provincial land area which are protected from extractive uses.

The discussion of logging in Nopiming Park engages these issues directly. On the one hand is the history of previous logging in the park area, even prior to its establishment. The company has also clearly stated that the wood supply from within the FML area is the most economic source for the Pine Falls mill, and a requirement to continued operation. On the other hand are changing circumstances in supply, and a changing public climate concerning the overall health of the environment.

There are precedents to the removal of wood volume from the FML, and the precedent of replacement of volume lost as a result of fire, disease, and the withdrawal of cutting rights in lands set aside as parks. One possibility for new fibre supply could be found in negotiation of replacement wood volume with the Province. For economic reasons, it would be preferable that the replacement area be adjacent to or nearby the current FML.

It has also been suggested that there are alternatives to supply which might replace fibre that had been lost through the removal of cutting rights to specific timber. With mill upgrading being a requirement to meet new federal effluent standards in the near future, other modifications to the mill might allow for replacement fibre without the requirement of additional forest area. One possibility in this category might be the use of species other than spruce in greater volumes in the mill process. To date, jack pine is used to its practical limit, at about 14%, but hardwoods are not at all utilized. It might also be possible to increase the ability of the mill process to take greater advantage of recycled newsprint fibre through de-inking. No specific information dealing with the practicality of these suggestions was received into evidence, and therefore the economic feasibility of such plans remains unknown to the Commission.

The Manigotagan River

The Manigotagan River runs westward out of Nopiming Park and into Lake Winnipeg. Canoeists value it for its accessible location, scale, beauty, and reliable intermediate-level whitewater potential. The section between the park and PTH 304 is currently uninterrupted by bridges, though a winter road crossing exists. Roads to Cascade Rapids, Turtle Rapids, and Old Woman Falls appear redundant to forestry operations due to fire in the areas originally intended for access and harvest.

As a matter of forestry policy, buffers to cutting are currently in place along the river, and vary in width. Wider stretches of the river are currently protected by buffers of 100 m. Enlargement of the buffers to a corridor of 250 m would protect many of the non-consumptive values of the river.

Stakeholder participation

Throughout the course of the Commission hearings, the formation of some type of stakeholders' committee for the purpose of providing citizen input to company and government forest resource management decisions was discussed. In the EIA, a monitoring body was recommended as a means of providing interested parties with direct access to Abitibi's operating plans. A stakeholder partnership was also seen as a means of continuing the dialogue which had been established over the course of the EIA between Abitibi-Price and various environmental groups.

In response to this recommendation in the EIA, the company acknowledged the need for greater communication with those groups interested in forest management. It stressed the need that no party feels excluded from contributing to the process. In the final submission of its counsel to the Commission, Abitibi recommended that this stakeholders' committee report to the Integrated Resource Management Team. Abitibi-Price provided further recommendations regarding its composition and reporting relationship, and suggested that funding would be essentially done by the company.

The position of the Department of Natural Resources was that a stakeholders' group should not be added as a part of the existing Integrated Resource Management Team, since the Department

considered that additional representation would be cumbersome. The Department expressed eagerness to have additional input, and an openness to recommendations on how this could best be achieved.

There was general consensus between Abitibi-Price, government, and intervenors of the need for a mechanism for continued and co-operative dialogue regarding forest resource issues. In its presentation to the Commission, the Sagkeeng First Nation suggested that a co-management type of structure would be Sagkeeng's preference, but suggested a willingness to provide input regarding forest resource management in a muti-stakeholder forum.

In its recommendations, the Commission has proposed the formation of a Stakeholders Advisory Committee (SAC). The recommended funding arrangement for the operations of the SAC reflects both the willingness of the company to support stakeholder involvement, and the revenue from stumpage which accrues to the Province from forestry operations.

RECOMMENDATIONS

1. Premise to the licence

The Clean Environment Commission recommends that the Manitoba Department of Environment develop and issue a licence that will address forestry operations by Abitibi-Price Inc. within FML 01, described in its proposed Forest Resource Management Plan, 1991-1998. **Adherence to the recommendations for mitigation and monitoring proposed by Synthen Resources Limited in the environmental impact assessment of the Eight Year Plan would be a basic premise of the licence.** Where Abitibi-Price has made alternate suggestions to the mitigation and monitoring proposed in the EIA, the Commission has responded specifically or in general within the terms of its recommendations to the Minister.

2. Stakeholders Advisory Committee

(a) A Stakeholders Advisory Committee (SAC) should be established which would report in an advisory capacity to the Integrated Resource Management Team, but which would be independent of it. The Integrated Resource Management Team could suggest appropriate topics for SAC enquiry, but should not determine the agenda of the SAC.

(b) The mandate of the SAC would be to review and provide input to annual forestry operating plans; to provide another perspective regarding overall forestry issues; to advise the Integrated Resource Management Team on site-specific issues such as buffers, roads and stream crossings; and to monitor the conformity of the company and the Province to the terms of the licensing agreement.

(c) The underlying assumptions for operation of the SAC should be consensus-building and cooperation in its efforts to enhance forest resource decision-making.

(d) Initially the SAC should be headed by the Environment Officer responsible for licence enforcement. This arrangement may be changed after one year of operation, if desired by a majority of the members. Membership should be comprised of no fewer than ten and no more than twenty persons, including the Chair. A suggested list of member groups is

attached in Appendix B of this report, though flexibility is assumed in considering membership.

(e) The Commission strongly recommends that it be understood that participation in the proposed SAC by First Nations communities or groups in no way removes or limits their right to involvement in co-management negotiations or structures.

(f) An annual report of the SAC to the Minister of Environment should be required outlining its finances, activities, and recommendations. The report of the SAC should include an evaluation of its own structure, operations, and effectiveness.

(g) Members are charged with the responsibility of reporting to their own organizations.

(h) Meetings of the SAC should be at least quarterly, and likely more often, initially. Varying the location of meetings is suggested, with a focus on the communities in the FML 01 area.

(i) One of the consultants who contributed to the EIA might serve as facilitator for an initial seminar or retreat to establish the SAC and familiarize its members with the issues and with one another.

(j) Funding for the SAC should be provided equally by the company and the Province. This would provide for an honorarium (by request), travel costs, and expenses for actual attendance at meetings of the SAC (except where already covered by the terms of members' employment). Funding might also be required for the services of a facilitator to initiate the committee, or for the services of an independent consultant in reviewing complex reports.

(k) It should be required that the company and the Province provide all pertinent monitoring data to the committee.

(l) Examples of such issues stemming from the EIA which the SAC should consider soon after its establishment are the following:

(i) Determination of whether additional limitations to forestry activity should be set when the results of the caribou monitoring study become known.

(ii) Evaluation of proposals for roads, and road policy issues, such as decommissioning.

(iii) Consideration of whether disc trenching should be replaced by another technique at the time of economic retirement of the current scarification equipment.

(iv) Review of whether the need identified in the EIA for a company biologist is being met by on-the-job training and wildlife courses.

Additional issues for the consideration of the SAC have been identified within the terms of other recommendations outlined below.

3. Forestry activity in Nopiming Park

(a) Nopiming Park shall cease to be used as a source of wood fibre for commercial forestry as of three years from the date of issuance of the licence, but in any case no later than 1 January 1996.

(b) In the interim period between issuance of the forest management licence to Abitibi-Price and date of closure of Nopiming Park to logging, the park shall serve as a source of last resort for logging.

(c) The onus will be placed on the Integrated Resource Management Team in conjunction with the Stakeholders Advisory Committee to monitor the degree of logging in Nopiming Park over the course of the interim period which has been established.

(d) The nature, timing, and completion dates for reforestation of cutover areas within Nopiming Park will be determined by the Integrated Resource Management Team, in consultation with the Stakeholders Advisory Committee. If no agreement regarding the details of forest renewal within Nopiming Park can be reached by 1 January 1996, the issue will revert for decision to the Parks Branch of the Manitoba Department of Natural Resources.

4. Manigotagan River corridor

(a) The boundaries of Nopiming Provincial Park should be extended to include a corridor along the Manigotagan River from the point at which PTH 304 crosses the Manigotagan River to the current western boundary of the park. The designated corridor would be of the same minimum dimensions as the corridor along the Bloodvein River, 250 m on each side.

(b) Cutting within the designated Manigotagan River corridor should cease immediately.

(c) Where a bridge is at some point determined to be necessary within the corridor, it is recommended that separate public review and licensing of the bridge project under The Environment Act be required.

(d) Any and all roads within the designated river corridor should be closed and rehabilitated in order to protect the designated area. The design and monitoring of a program to rehabilitate such roads and the responsibility for such remediation shall be determined by the Integrated Resource Management Team. The Intergrated Resource Management Team shall seek advice from the Stakeholders Advisory Committee in these matters.

5. Other recommendations specific to the licence

(a) No cutting, selective or otherwise, should be allowed in buffers in the FML 01 area.

(b) Where possible, tops and limbs should be removed close to the felling site. At the time of economic retirement of the current mechanical harvesting equipment, on-site trimming for all cutting operations should become the standard practice.

(c) This licence should come under public review by the Clean Environment Commission within two and one-half years from the date of issuance of the licence, but in any case by 1 January 1995, which process would include a review of the effectiveness of the Stakeholders Advisory Committee.

6. General recommendations to the Minister of Environment

(a) The Department of Natural Resources, in conjunction with other departments, should ensure the adequacy of baseline biophysical data to enable sound forest management decisions. Funding commitments should be made to the collection of additional baseline data, where needed, as well as to long term research to address deficiencies in environmental knowledge.

(b) A full management plan for Nopiming Park should be developed, which would include public hearings in the process.

(c) A broader discussion within government should take place concerning the possible overcommitment of forest lands, given the requirements for both forestry and preservation.

(d) A comprehensive provincial forest policy consistent with the principles of sustainable development should be in place before the review of any other forest management licence.

(e) The Commission feels strongly that a review of the other sources of Abitibi-Price's fibre supply be carried out.

(f) Efforts should be made to assist the company to reduce the dependence of the mill in Pine Falls on natural forests for fibre supply.

(g) The establishment of woodlots on marginal farmlands should be encouraged.

(h) Commercial forestry activity in all provincial parks should be phased out.

(i) The concept of the "three-forest system" (farmed, modified, and natural) which was brought out in the EIA should be explored as a means of enhancing the integration of multiple forest values in forestry decision-making, and as a means of encouraging forestry consistent with the principles of sustainable development.

(j) The extreme northeast corner of Nopiming Park, which has not been slated for cutting in the Eight Year Plan, should be considered for wilderness status or for inclusion in the Endangered Spaces Campaign. This zone would be contiguous with the larger area of Caribou Wilderness Park in Ontario, and mutually reinforce the protection which wilderness status affords.

GLOSSARY OF TERMS

Allowable Annual Cut (ACC): The average volume that may be harvested annually under sustained yield management. Roughly equal to the amount of new growth produced by the forest each year including a proportion of mature volume less deductions for losses due to fire, insects and disease.

Forest Management Licence: A licence under the Manitoba Forest Act authorizing the cutting, removal, renewal, and management of Crown timber. In general terms, a forest management licence is established on a long-term, or "evergreen" basis to promote continuity of management and renewal.

FML 01: Manitoba's first forest management licence, established in an agreement between the Province and Abitibi-Price Inc. in 1979. The terms of the agreement define the area of the licence, and specify responsibilities in forestry management.

Geographic Information Systems (GIS): An information system that uses a spatial database to provide answers to queries of a geographical nature through a variety of manipulations such as sorting, selective retrieval, calculation, spatial analysis, and modelling.

Integrated Resource Management Team: A regional committee composed of members of the branches of the Manitoba Department of Natural Resources (forestry, fisheries, wildlife, parks, regional services, and lands) organized to review natural resources issues. Formerly known as the Resource Planning Committee (RPC), the team reports to the Director of the Resource Integration Branch of the Department of Natural Resources.

Integrated Wood Supply Area (IWSA): An area on which Abitibi-Price has been granted a first right of refusal on crown timber suitable for the existing paper mill. The currently designated IWSA extends north of FML 01 and to the west side of Lake Winnipeg. The IWSA provides about 27% of Abitibi's annual wood requirements.

Technical Advisory Committee: A committee composed of representatives of provincial government agencies (occasionally with federal membership) to review and design specific environmental assessments.

Timber Berth: A form of forest tenure of moderate duration, normally 25 years. Unlike the forest management licence, it is not "evergreen" and does not involve sustained forest management for the berth holder.

APPENDIX A: LIST OF EXHIBITS

16 October 1991, 1:00 p.m. - 5:00 p.m. and 7:00 p.m. - 10:00 p.m.
17 October 1991, 7:00 p.m. - 11:00 p.m.
18 October 1991, 1:00 p.m. - 5:00 p.m. and 7:00 p.m. - 10:00 p.m.
St. Georges Parish Hall
17 Baie Caron N.
St. Georges, Manitoba

1. Abitibi-Price Forest Management Licence 01: Eight Year Forest Resource Management Plan, 1991-1998. Books 1, 2, and 3.

2. Guidelines for the Preparation of an Environmental Impact Assessment for the Abitibi-Price Inc. FML Eight Year Forest Resource Management Plan, 1991-1998.

3. Letter, dated 24 July 1991, from Greg McKinnon, Habitat Coordinator, Department of Fisheries and Oceans, Government of Canada, to Mr. David Chown, Woods Manager, Abitibi-Price Inc.

4. Presentation of the 1991-1998 Forest Management Operating Plan. Abitibi-Price Inc.

5. Recommended Fish Protection Procedures for Stream Crossings in Manitoba. Manitoba Natural Resources, Fisheries Branch.

6. Recommended Buffer Zones for Protecting Fish Resources in Lakes and Streams in Forest Cutting Areas, 1990. Manitoba Natural Resources.

7. Interim Management Guidelines: Nopiming Provincial Park. Manitoba Natural Resources, Parks Branch.

8. The Department of Fisheries and Oceans Policy for the Management of Fish Habitat. Government of Canada, Fisheries and Oceans.

9. Curriculum Vitae. R. David Chown.

10. Curriculum Vitae. T. Harold Peacock.

11. Curriculum Vitae. Vincent T. Keenan.

12. Summary of EIA slide presentation to the Clean Environment Commission, Pine Falls, 16 October 1991. Synthen Resources Limited.

13. Resume. Peter M. Ashton.

14. Environmental Impact Assessment of Abitibi-Price FML #01 Forest Resource Management Plan, 1991-1998, Main Report. Synthen Resources Limited.

15. Curriculum Vitae. Ruth Marr.

16. Video Cassette. 3.5-minute excerpt. (Norcar system for harvesting and forwarding).

17. Forest Management Guidelines for Wildlife in Manitoba, December 1989. Manitoba Natural Resources.

18. Curriculum Vitae. Harold N. Westdal.

19. Response to Mitigation and Monitoring Recommendations in the Environmental Impact Assessment of Abitibi-Price Inc. FML 01 Forest Resource Management Plan, 1991-1998.

20. Response to Mitigation and Monitoring Recommendations in the Environmental Impact Assessment of Abitibi-Price Inc. FML 01 Forest Resource Management Plan, 1991-1998. Slide Presentation Guide.

21. Response to the Department of Fisheries and Oceans Mitigation Measures (Letter 24 July 1991). Excerpts.

22. Brief (untitled) submitted by the United Paperworkers International Union Local 1375.

23. NESDA submission to the Clean Environment Commission Hearing on the Renewal of the Abitibi Forest Management Licence.

24. Brief from TREE on the Environmental Assessment of the Abitibi-Price 8 Year Forest Management Plan, 16 October 1991.

25. Submission to Manitoba Clean Environment Commission Respecting Abitibi-Price Inc. Forest Resource Management Plan by Manitoba Environment, 16 October 1991. Technical Advisory Committee.

26. Letter, dated 27 May 1989, from Honourable J. Glen Cummings, Minister of Environment, Province of Manitoba, to Mr. Stan Eagleton, Chairman, Clean Environment Commission.

19 October 1991, 10:00 a.m. - 5:30 p.m.
W.M. Ward Technical Services Lab
745 Logan Avenue
Winnipeg, Manitoba

27. Submission to the Manitoba Clean Environment Commission Concerning the Proposed Abitibi-Price Inc. Eight Year Forest Resource Management Plan, 1991-1998. Manitoba Naturalists Society.

28. Artwork (copies) submitted by Dr. R. Rachev.

29. Brief (untitled) submitted by Mr. H. Williams on behalf of Time to Respect Earth's Ecosystems (TREE).

30. Park Map: Nopiming Provincial Park. Manitoba Natural Resources.

31. CEC Hearings, 19 October 1991. Abitibi-Price Forest Resource Management Plan, 1991-1998 Environmental Impact Assessment. Canadian Parks and Wilderness Society, Manitoba Chapter.

32. Map -- TWP 21 RGE 17E (Forest Inventory) as submitted by the Manitoba Recreational Canoeing Association.

33. Report on the Abitibi-Price Forest Resource Management Plan, 1991-1998. Manitoba Recreational Canoeing Association.

34. A Brief to the Clean Environment Commission concerning the Forest Harvesting Proposed for Management Licence Area #01. Hendrik Herfst.

35. Brief to the Clean Environment Commission Concerning the Environmental Impact Assessment of Abitibi-Price's FML 01 Forest Resource Management Plan, 1991-1998. Manitoba Environmental Council.

36. Notes, as prepared and presented by Dr. Alan Lansdown, Chairman, Manitoba Environmental Council.

37. Statement Regarding the Findings of the Technical Advisory Committee on the Environmental Impact Assessment of the Abitibi-Price Forest Resource Management Plan, 1991-1998, dated 4 July 1991 by Abitibi-Price Inc. Pine Falls, Manitoba.

38. Overall Summary of EIA Findings: Environmental Impact Assessment of Abitibi-Price Forest Resource Management Plan, 1991-1998. Synthen Resources Limited.

16 November 1991, 9:30 a.m. - 5:30 p.m.
The W.M. Ward Technical Services Lab
745 Logan Avenue
Winnipeg, Manitoba

39. Letter, dated 25 September 1991 from Mr. Hugh Hornbeck, to the Clean Environment Commission.

40. Letter, dated 23 October 1991 from Mr. Jerry Fontaine, Chief, Sagkeeng First Nation, to Mr. Rory Grewar, Secretary, Manitoba Clean Environment Commission.

41. Environmental Protection Practices Handbook. Environmental Affairs Department, Trans Canada Pipelines. Submitted by Dr. Alan Lansdown.

42. Letter, dated 31 October 1991 from Mr. Rory Grewar, Secretary, Manitoba Clean Environment Commission, to Mr. Umrendra Mital, Deputy Minister, Manitoba Natural resources.

43. Letter, and enclosures, dated 4 November 1991 from Mr. W.G. Ryall, Fillmore & Riley, on behalf of Abitibi-Price Inc., to Manitoba Clean Environment Commission.

44. Letter, and enclosure (map), dated 13 November 1991 from C. Gordon Prouse, Director of Parks, Manitoba Natural Resources, to Mr. Rory A. Grewar, Secretary, Manitoba Clean Environment Commission.

45. Letter, dated 5 November 1991 from Mr. W.G. Ryall, Fillmore & Riley, on behalf of Abitibi-Price Inc., to Mr. Rory A. Grewar, Secretary, Manitoba Clean Environment Commission.

46. Sagkeeng Forestry Synopsis. Submitted by Sagkeeng First Nation.

47. "What You Told Us": Forests. Manitoba Round Table on Environment and Economy.

48. Canada-Manitoba Partnership Agreement in Forestry.

49. The Forest Act, The Forest Amendment Act and Regulations.

APPENDIX B: PROPOSED LIST OF SAC MEMBERS

Environment Officer responsible for licence enforcement (Chair)
Local business
Local government
Union
Local Indian Bands
Manitoba Metis Federation Local
Manitoba Naturalists Society
TREE
Canadian Parks and Wilderness Society (Manitoba chapter)
NESDA
Manitoba Environmental Council
Cottagers' Association
Manitoba Recreational Canoeing Association
Department of Natural Resources
Abitibi-Price

APPENDIX C: STUDY AREA LOCATION MAP

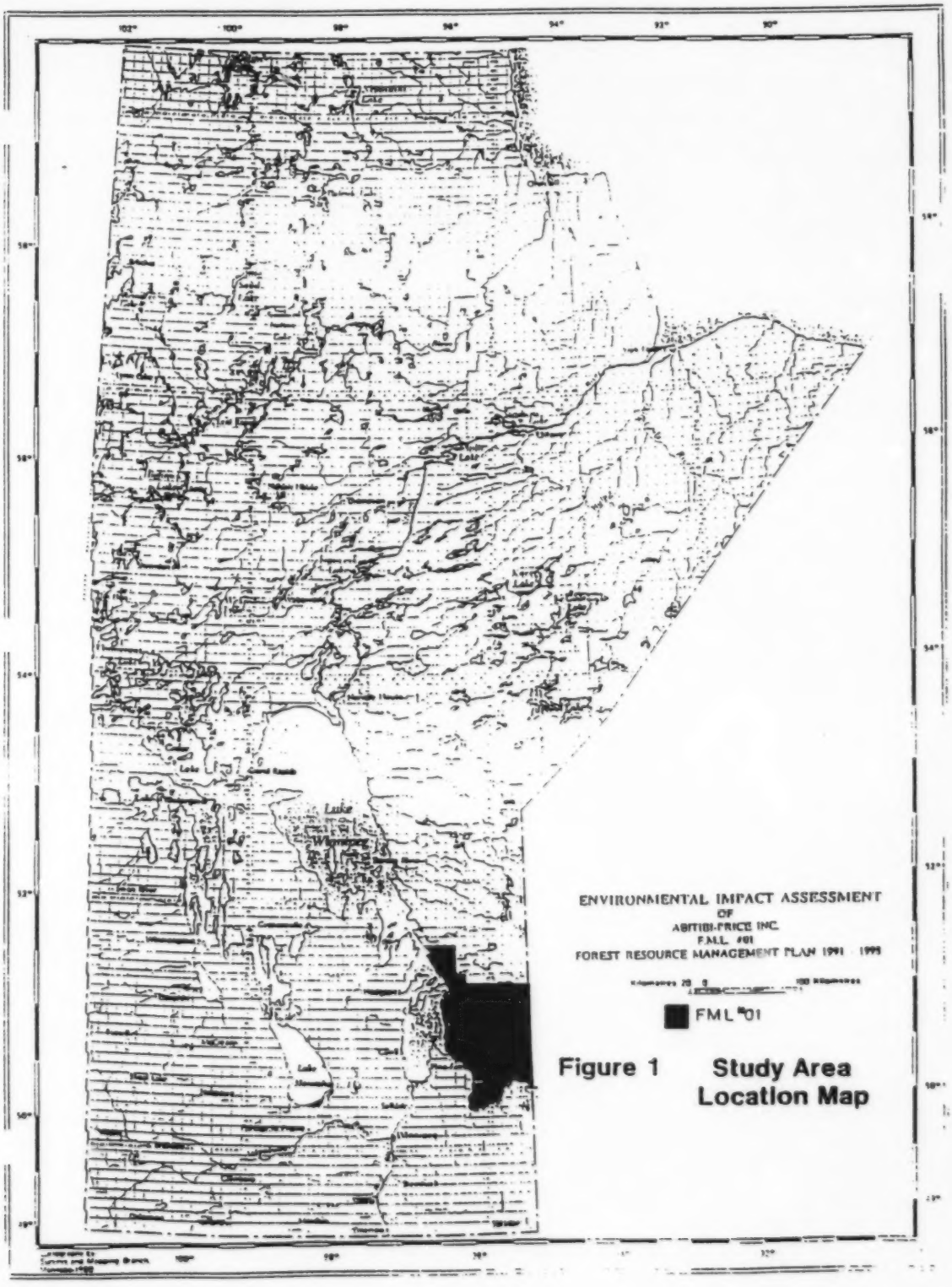

Figure 1 Study Area Location Map